{In Archive} hydraulic fracturing in the news

Beth Wagner to: Brian Graves, Ken-E Johnson, Michael Bechdol, Michael Overbay, Mike Frazier, Ray Leissner, Susie McKenzie, Jessica Duggan, David Parker, Philip Turner, Rob 04/09/2012 11:58 AM

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Hydrofracting, Water, and Melange: An IMPACT Op-Ed
by Engberg, RA
Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 3-5. Jul 2011.

Hydraulic fracturing is the preferred method of extraction of natural gas from deep, dense deposits. The high pressures and chemical and physical materials required in the technique have raised questions about drinking water safety.

HYDROFRACKING: Uncertain Decision-Making in a Value-Laden Conflict
by McCuen, RH
Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 6-7. Jul 2011.

While human values and the associated emotional biases are central to the hydrofracking debate, the difflculty in reaching a consensus is compounded by the uncertainties in technical, legal, and value issues.

Background: Hydraulic Fracturing and Water Resources
by Smith, T
Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 8-9. Jul 2011.

EPA's draft plan of study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources includes Retrospective Case Studies to investigate reported instances of drinking water resource contamination and Prospective Case Studies involving sites where hydraulic fracturing will occur after the research is initiated.

Hydraulic Fracturing in Wyoming
by Doll, TE
Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 10-11. Jul 2011.

The Wyoming Oil and Gas Conservation Commission revised and added new rules and regulations on hydraulic fracturing in September 2010. The rules addressed well operation and location and required industry to disclose ail chemical compounds used in well simulation.

Drill, Maybe, Drill
by Grumbles, BH
Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 12-13. Jul 2011.

An expanded scientific review of fracking risks is important as much more informtion has become available since the practice was first employed, including complaints about methane migration and contaminated water supplies. States and interstate organizations in Shale Gas regions are also stepping up efforts to study, regulate, and monitor the impacts of natural gas drilling and fracking and the management of "fiowback" fracking fluids.

Wireless Sensor Networks (WSNs) For Real-Time Situational Awareness of Hydrofracking Operations
by Rooke, SS; Fuhr, PL

Water Resources Impact [Water Resour. Impact]. Vol. 13, no. 4, pp. 16-20. Jul 2011.

The sensor and measurement capabilities of technologies such as Wireless Sensor Networks (WSNs) offer significant opportunities to maintain control of potential environmental contamination from hydraulic fracturing operations.

A variational approach to analyze a natural fault with hydraulic fracture based on the strain energy density criterion
by Chuprakov, DA; Zhubayev, AS
Theoretical and Applied Fracture Mechanics [Theor. Appl. Fract. Mech.]. Vol. 53, no. 3, pp. 221-232. Jun 2010.

A simplified analytical model of the interaction between a hydraulic fracture and an existing natural fault is developed. The mechanical activation of the natural fault as a result of contact with a pressurized fracture is described for plane strain conditions and quasi-static fracture propagation approximation. Using a variational approach, the normal and shear stresses, as well as the boundaries of the open and sliding zones along the fault, are predicted for three stages of the fracturing process (fracture approaching, coalescence, and fluid penetration). An accumulated concentration of shear stress at the tip of the fault's sliding zone is shown to create sufficient tensile stress to initiate a new tensile crack on the opposite side of the fault, provided either the differential in situ stress is low or the friction coefficient is sufficiently large. The results of direct numerical simulation of the fracture interaction fit the model predictions made from the strain energy density fracture criterion.

The Politics of "Fracking": Regulating Natural Gas Drilling Practices in Colorado and Texas
by Davis, Charles
Review of Policy Research [Rev. Policy Res.]. Vol. 29, no. 2, pp. 177-191.

This article focuses on the politics of regulating natural gas fracking operations in Colorado and Texas. Between-state differences in the economic importance of natural gas production, political traditions, environmental impacts of drilling activities, and local governmental responses to risk reduction, and entrepreneurial activities are discussed in relation to policy-making initiatives. In the concluding section, I suggest that Colorado's regulatory approach offers a greater degree of environmental protection than Texas. Key reforms adopted in 2007-8 can be largely attributed to electoral victories that ensured unified party control over state government and the determined efforts of the proenvironmental governor to make changes in both the regulatory commission and in the substance of natural gas drilling policies.

EPA, USGS Weigh 'Earthquake' Risks From Fracking Wastewater Disposal
Clean Energy Report Posted: April 6, 2012
EPA and the U.S. Geological Survey (USGS) are grappling with key questions about potential risks for seismicity, or earthquakes, as a result of underground disposal of the large volumes of wastewater from hydraulic fracturing, part of ongoing research that could shape any changes to how EPA regulates oil and natural gas wastewater injections.

Data culled from recent bouts of seismic activity in eastern states linked to wells used to dispose of oil and gas drilling wastewater points to two major research questions the agencies are considering, Bill Leith, associate coordinator with USGS' earthquake hazards program, told an April 4 panel discussion held in Reston, VA: how the volume of wastewater may affect the magnitude of seismicity, and how the pressure of injections affects seismicity risks.

Some studies have indicated that controlling the pressure at which fluid is injected into an underground well in a fault zone may raise or lower the risk of triggering seismicity. Other research seems to show that the larger the volumes of wastewater disposed, the greater magnitude of earthquake that can be induced, Leith said during the USGS-hosted panel, “Science or Soundbite: Shale Gas, Hydraulic Fracturing, and Induced Earthquakes.”

“Which is the bigger problem? We're working with EPA on [that question]” Leith told the panel. USGS and EPA, along with the Department of Energy (DOE), plan on tackling those and other questions in a series

of new studies proposed in their fiscal year 2013 budget requests to assess the safety of fracking, a USGS official says.

The outcome of the research effort could inform future changes to EPA's Safe Drinking Water Act Class II underground injection permitting rules for oil and gas operations that inject wastewater.

Environmentalists and Democrats concerned about seismicity risks from fracking are pushing for EPA to consider tighter rules for wastewater from fracking operations, arguing that the Class II rules are too lax to protect against seismicity and other environmental risks. Sen. Frank Lautenberg (D-NJ) has asked USGS to conduct an investigation into whether existing federal regulations are effective in protecting against risk of earthquakes.

Republicans meanwhile have raised general concerns that EPA's efforts to assess fracking risks could be used to argue for stricter rules they say may be unnecessary. Some state officials argue that critics of the fracking industry are using “hysteria” to make unfounded claims that fracking increases the risk of earthquakes.

EPA in its FY13 budget proposal is seeking a total of $14 million for fracking research, with $6 million going to existing ongoing study on water risks and $8 million toward an “effort to assess additional questions regarding the safety of hydraulic fracturing.” And USGS says its separate $13 million budget request is intended to support science to understand and address potential impacts of fracking on induced seismicity and other things.

The seismicity research, however, will be a “coordinated effort” by EPA and USGS, with neither agency taking the lead role, USGS Regional Executive for the Northeast, David Russ, told Inside EPA following the April 4 panel.

Russ said the heads of each agency have completed a memorandum of understanding detailing the research and how to divvy it up, which is undergoing review at the White House Office of Management and Budget.

Other questions the agencies are weighing for their research effort include whether wastewater disposal practices can be altered to mitigate the risks associated with induced seismicity, why earthquakes occur at some disposal sites and not others, and “How do these questions relate to regulation and permitting?” Leith said.

For example, he said that after increased earthquake activity occurred in West Virginia, a state regulator asked if the state's proposed regulatory fix -- cutting the amount of fluid they allow to be disposed of in each well by half -- would address the problem. However, even after the state moved to reduce the allowable amount of wastewater per well, the seismicity issues continued to occur in the same area, Leith added.

EPA has been considering similar questions, particularly related to its Class II regulations, Ann Codrington, director of the agency's drinking water protection division within the Office of Water, told state groundwater regulators during the Jan. 24 Ground Water Protection Council conference. Codrington outlined several questions EPA is currently grappling with related minimizing induced seismicity, including, "How are we adapting to the increase in demand?" and "How are Class II rules managed nationwide?" the presentation says.

An EPA working group and a separate National Academy of Sciences panel are also crafting reports on mitigating seismic risks associated with underground injection for energy extraction.

Induced Seismicity

Induced seismicity -- earthquake activity triggered by manmade interference -- has increasingly become an area of public concern, particularly following an uptick in earthquake activity in Ohio, Arkansas, Texas and other states linked to underground injection control (UIC) wells used to dispose of wastewater from oil

and gas drilling. Some of the earthquakes are believed to have occurred because the injection of fluid lubricates the area near a fault line, relieving pressure on the fault and causing slippage, USGS officials said during the April 4 panel.

While technological advances in fracking have led to its ability to unlock huge, previously untapped reserves of shale gas and oil, the boom has also created a firestorm of public concern about environmental risks -- a number of which involve how to safely dispose of the massive amount of wastewater generated during the fracking process.

Disposal to UIC wells has long been industry's and EPA's preferred method of getting rid of oil and gas wastewater, but lack of geologic structures which support such wells, particularly in the Northeast, has curtailed industry options for disposal. For example, in Pennsylvania, the only types of formations that could be reasonably be used to house UIC wells for waste disposal are already being drilled to produce gas, leaving operators to either recycle or ship waste to other states, one state source says.

And in Ohio, where Youngstown Township disposal operations receiving wastewater from Pennsylvania were linked to a series of earthquakes, concerns about increased seismicity are already seen driving regulatory changes -- a move which could further limit disposal options for drillers.

Ohio's Department of Natural Resources issued draft revisions to its existing UIC rules last month, proposing to require a mandatory reviews of existing geologic data to identify known fault prior to siting a well, measurement of reservoir pressure prior to injection and require operators to install a continuous monitoring system to track any pressure changes.

But if operators are forced to rule out certain areas as off-limits for siting a well due to concerns about faults, the state source says it could further constrain states' ability to keep pace with the large volumes of wastewater generated from drilling.

Other state regulators during the Environmental Council of the States (ECOS) spring meeting in Austin, TX last month, appeared to downplay risks associated with underground injection.

Doug Johnson, of the Railroad Commission of Texas, the state's oil and gas regulator, said that while some underground injection of wastewater has led to seismic occurrences in Texas, such incidents are generally of an extremely low magnitude and wouldn't pose substantial human or environmental risks.

And Michael Krancer, secretary of Pennsylvania's Department of Environmental Protection, also speaking during the ECOS meeting, lashed out at media statements indicating that increases in fracking have led to an uptick in seismic activity, saying that underground injection practices have always been linked to low-level earthquakes.

“Because here the question is: fracking causes earthquakes, or at least that's what you might hear,” Krancer said, adding that fracking critics have fueled much of the public concerns. “So you'll find everything from the solar flares from last week blamed on fracking to increased meteorite activity to, you know, anything could be blamed on fracking. We live in a little bit of that mentality today, and our job is to filter out the nonsense, filter out the hysteria, filter out the fiction and focus on the fact and focus on the science and try to keep our eyes on the ball on that. In my experience, states are very, very talented in doing that.” -- Bridget DiCosmo

Armed with new technology , industry tries again to tap rich U .S. deposits

Margaret Kriz Hobson, E&E reporter Energywire Published: Monday, April 9, 2012

In late March, Red Leaf Resources, a small energy company in Sandy, Utah, received a state permit allowing the company to break ground on an oil shale production facility in eastern Utah. Company officials predict that within the next 18 months, Red Leaf will begin commercial oil shale production -- the first in the United States in 30 years.

To produce oil, the company plans to mine the oil shale and dump the crushed rock into a clay-lined pit.

Layering the rock with pipes, the company will seal the rock enclosure and pump heated gas into the pipeline network. Once the oil shale is heated to at least 650 degrees Fahrenheit, the solid bituminous material in the rock, known as kerogen, will chemically convert into oil and natural gas.

"It takes a few months to heat it up to a temperature high enough to sweat the oil and hydrocarbons out of the rock," said Jeff Hartley, a government affairs consultant to Red Leaf.

Understanding shale drilling terminology
The terminology around oil shale development has become increasingly confusing as energy companies have successfully tapped the nation's deep underground reserves of shale oil and shale gas using hydraulic fracturing and horizontal drilling technologies.

Shale oil is oil trapped in tight rock formations, which can be released by fracking, or cracking the underground rock and pumping the liquid fuel to the surface. Shale oil development is flourishing in the Bakken Formation regions of Montana and North Dakota and the Niobrara Formation in Colorado and Wyoming.

Shale gas is natural gas that's located in impervious shale formations, which also can be extracted by fracturing the rock and pumping it out of the well. Thanks to increased use of fracturing, U.S. shale gas development has expanded like wildfire, with exploration under way from Texas to New England to California.

Oil shale is rock that contains a solid hydrocarbon called kerogen or fossilized algae. If heated to 650 degrees Fahrenheit or more, the kerogen can be converted into oil and natural gas. Brazil, China and Estonia use oil shale to produce electricity and some oil. But the industry is still perfecting new technologies to produce large volumes of oil from America's huge oil shale reserves in Colorado, Utah and Wyoming.

In the early stages of production, the company expects to produce 9,000 to 9,500 barrels of oil per day from a football-field-sized plot. Eventually, it will ramp up its daily production level to 30,000 barrels of oil. Red Leaf estimates its extensive leases could contain the equivalent of 1.5 billion barrels of oil.

Red Leaf is part of a growing industry movement aimed at testing new technologies to tap America's bountiful oil shale reserves, which are ranked as the richest in the world (see related story).

The industry is focused on the Green River Formation underlying Colorado, Utah and Wyoming, which holds an estimated 800 billion barrels of recoverable oil, according to the Energy Information Administration. That's roughly equivalent to all the conventional oil reserves in the Middle East.

Some estimates go even higher. A 2005 oil shale report by RAND Corp., a nonprofit research group, said the three-state region could hold 1.5 trillion to 1.8 trillion barrels of oil equivalent, though not all of it could be recovered.

Energy companies have been trying to capitalize on America's oil shale for decades. Previous efforts fell flat when world oil prices plummeted and government support dried up. Today, with world oil prices reaching beyond $100 per barrel and international oil demand continuing to grow, oil shale extraction is enjoying a resurgence.

International oil giants, foreign energy companies and a new generation of small firms are investing money in advanced technologies to develop the U.S. oil shale reserves. Many of those firms insist they can take the oil to market for $60 per barrel or less -- enough to cover costs and make a respectable profit.

"It's not crazy to think that you can do it for well below a hundred dollars per barrel," said James Bartis, a senior policy researcher at RAND Corp. and author of a 2005 RAND report on oil shale development in the United States. "The question is, is somebody going to get out there to build that first-of-a-kind commercial plant?"

Despite high oil prices, industry officials say interest in oil shale development could stall if the Bureau of Land Management follows through with a plan to dramatically reduce the amount of federal lands open to oil shale leasing.

In February, BLM issued an environmental assessment that proposes to limit leasing in the three-state area to 462,000 acres -- a 75 percent cut from the Bush administration's 2008 plan to open 2 million acres. The Obama administration proposal also would restrict the companies' activity on the federal lands, offering leases for research and development projects but not for commercial production.

"The current plan is extremely restrictive," said Jeremy Boak, director of the Colorado School of Mines' Center for Oil Shale Technology and Research. "It cramps anybody's ability to find a decent-sized plot of land and have a choice of where they want to operate."

The BLM proposal was developed after environmental groups successfully challenged the Bush oil shale plan. The environmentalists charge that oil shale extraction would devastate local wilderness areas, use too much water and produce massive levels of greenhouse gas emissions.

An August Government Accountability Office report raised similar concerns about oil shale development, arguing that it "could have significant impacts on the quality and quantity of water resources" in the West.

The report concluded, however, that the full impact of oil shale development "is unknown because technologies are not yet commercially proven, the size of a future industry is uncertain, and knowledge of current water conditions is limited."

Bounty in Utah, Colo.
Red Leaf is operating on private and state lands in a region of Utah called the Uinta Basin, where the ore is sometimes found in outcroppings on the landscape. The Utah oil shale veins tend to be located 60 feet or so below the earth's surface and can be easily mined.

Red Leaf is not alone in targeting the Utah region. Enefit American Oil, the U.S. branch of an Estonian national energy company, has also purchased mineral rights on private lands in the region and plans to build an oil shale extraction facility.

By 2020, the company expects to produce 25,000 barrels of oil a day, expanding to 50,000 barrels by 2024. Enefit's Utah facility will use technologies that the company advanced during its 30 years of oil shale development in Estonia. And as Estonia is part of the European Union, the oil shale technologies must meet the bloc's tough air and water pollution standards, noted Enefit CEO Rikki Hrenko.

The most valuable U.S. oil shale resources, however, are located deep under northwestern Colorado's Piceance Basin, a 1,300-square-mile region of rock that contains an estimated 1.52 trillion barrels of oil equivalent fuels. Those veins of oil shale tend to be 1,000 feet below the earth and can be up to 1,000 feet thick.

The Piceance oil shale concentrations are so massive that a single acre has the potential to produce 2.5 million barrels of oil, according to RAND's Bartis. Eighty percent of the basin region is owned by the federal government.

Because mining in the basin would be prohibitively expensive, energy companies are looking for ways to heat the oil shale underground, a process that requires heating the ore to at least 650 degrees Fahrenheit to convert the kerogen into oil and gas.

Several energy companies -- notably American Shale Oil LLC, Exxon Mobil and Royal Dutch Shell -- are testing complex new "in situ" technologies to produce oil and gas from the deep oil shale reserves.

The technological advances in oil shale development have not tempered environmental opposition to the industry. A March report by Western Resource Advocates, a Boulder, Colo.-based environmental group,

argued that the industry would use a significant amount of water at a time when states are struggling to balance competing needs for the dwindling resource.

Environmentalists warn that oil shale extraction would increase air pollution in the region and produce 25 to 75 percent more greenhouse gas emissions than conventional crude oil.

The report charged that other oil and natural gas development in the West has polluted the air in Colorado, Utah and Wyoming, leaving some of the rural communities with "worse air quality than Los Angeles."

Air pollution issues could be the "deal breaker" for companies hoping to build a massive oil shale industry in the West, argued Jason Hanson, an oil shale researcher for the Center of the American West at the University of Colorado, Boulder.

Hanson noted that federal air quality standards set for the region under the Clean Air Act could dramatically limit oil shale production. "It's conceivable that the first company that actually gets up and running will take up all of that margin and the remaining companies would be boxed out" because their operations would cause the region to exceed federal air pollution caps, he said.

The industrial activity, which would be located close to national parks and monuments, could also have a devastating impact on the dwindling populations of native plants and wildlife, Hanson said. He noted that the three-state region is home to more than 200 species that are protected under federal law.

But industry officials say the environmental community's air and water pollution estimates for the oil shale industry are based on technologies developed in the 1970s and '80s. "The oil shale technologies in all of the studies cited by environmental groups are 30 years old or more," said Red Leaf's Hartley. "At the time, there were legitimate concerns with water."

Industry officials argue that the new technologies use far less water and produce less pollution. "There's a wide range of technologies being considered," said Glenn Vawter, executive director of the National Oil Shale Association, an industry-funded education group. "We won't know what the water usage will be until we know what the technology is."

Shale boom and bust

The oil shale industry has gone through boom and bust times in the West for more than a century. Local lore has it that early U.S. settlers learned about the energy potential of the oil shale rock through bitter experience.

At a congressional hearing last year, Helen Hankins, Colorado state director for the Bureau of Land Management, shared the legend of a homesteader who built a fireplace out of the oil shale rock that he'd found near his home. "During a housewarming party, [he] not only saw his fireplace but his home go up in flames," she said.

The most recent push to commercialize oil shale came during the 1970s Arab oil embargo, when America poured billions of dollars into developing the nation's unconventional energy technologies. At the same time, Canada focused on tapping its own domestic resources -- Alberta's massive oil sands reserves.

U.S. oil shale companies ultimately produced about 6 million barrels of oil from the Western rock, said Vawter. But the domestic industry collapsed in the 1980s when world oil prices plummeted to $10 per barrel and the U.S. Congress ended federal subsidies supporting the oil shale program.

When federal support dried up, Exxon shut down its $5 billion project in northwest Colorado, putting more than 2,000 people out of work. Colorado residents still refer to that day, May 2, 1982, as "Black Sunday."

Meanwhile, Canada has continued to underwrite its oil sands development program for the last 30 years, despite wild fluctuations in the world oil prices.

"In Canada, the first plants could pay for their operating expenses, but they weren't profitable," said Alan Burnham, chief technology officer of American Shale Oil. "But Canada had a government policy which supported that industry as it went through the technology maturation. And so when the price of oil popped back up, it's in great shape."

Burnham, who worked for a U.S. oil shale company in the 1970s and '80s, argued that when the U.S. government cut off federal subsidies for the industry, "we essentially stopped oil shale activities. Now it will take longer for us to get up that maturity curve."

As the price of oil inched back up early this century, the federal government took a fresh look at oil shale. In 2005, Congress passed the Energy Policy Act, which directed the Interior Department to begin leasing in the three-state region. In 2008, the Bush administration handed out six oil shale leases to four companies.

The leases granted the energy firms access to 160 acres of federal lands, with the possibility of leasing an additional 5,120 acres if their oil shale technology could be ready for commercialization in 10 years. At the time, 30 companies applied for the federal leases.

In 2010, the Obama administration offered another round of leases. This time, however, the companies that developed new market-ready technologies on their 160-acre leases were only promised another 640 acres to commercialize their process. Only three companies applied.

The terms of the next round of oil shale leasing have yet to be disclosed by the Interior Department, which is holding a series of public hearings in the West on BLM's new oil shale development proposal. The final plan could be released this summer.

Meanwhile, House Republicans are pushing the White House to expand that leasing plan. This spring, the House passed a transportation bill that would require BLM to offer 2 million acres of public land for oil shale exploration in Colorado, Utah and Wyoming. That provision, crafted by Colorado Republican Rep. Doug Lamborn, was later blocked by the Senate.

Oil shale development continues to travel a bumpy road in the United States. But energy companies are still attracted to the resource, based on the sheer volume of oil locked up in the Western shale reserves, Vawter said.

"The rationale for most of the companies involved in this is: It's such a huge resource that if we can crack the economic cost barrier and do it in an environmentally responsible way, it just opens up such a huge resource of oil for the United States," he explained.

Hrenko of Enefit argued that oil shale development should be treated much like any other energy resource. "We have models from the mining industry and best practices available from the oil refining industry," she argued. "What we're doing is essentially marrying those two."

But RAND's Bartis insisted that the U.S. oil shale resources are too precious to open to unlimited development. "This is not like normal leasing of federal lands, where you say, 'Who wants the land?'" he said. "This is such an amazingly wonderful resource that it's important to the taxpayers that we monetize it. This is a tremendous asset for the United States. It needs to be properly husbanded."

Big money being spent to tap into reserves

Margaret Kriz Hobson, E&E reporter Energywire Published: Monday, April 9, 2012

When Chevron Corp. abandoned its federal oil shale lease in Colorado's Piceance Basin in February, environmentalists declared that the decision was proof that oil shale development is too expensive and too difficult. Rob Dubuc, staff attorney at Western Resource Advocates, described Chevron's move as "another in a long line of examples proving that nobody knows how to develop oil shale on a commercial scale."

Chevron officials said the oil shale project had been "productive" but explained that the company was dropping out of the oil shale race to concentrate on "other priorities and projects in North America and around the globe." Chevron hopes to transfer its lease to another company.

But although the oil giant has bowed out of the oil shale race, several other companies continue to invest millions of dollars to develop technologies that they hope will give them access to America's massive oil shale reserves.

James Bartis, a senior policy researcher at RAND Corp., predicted that large-scale production from U.S. oil shale reserves may not be technically possible for another two decades.

"We don't know what the fundamental parameters are of the most attractive technologies for getting oil shale out of the ground," Bartis said. "We won't know that until the first pioneer plants are up and running. That would probably take 12 years at minimum. In 20 years, with a really rapid program, we might get to 1 million barrels" of oil per day from the oil shale reserves.

The following are five of the companies that are focused on extracting oil and gas from the Colorado and Utah oil shale reserves.

Red Leaf Resources expects to break ground this year on an oil shale project aimed at extracting oil and natural gas by sealing crushed rock into a clay-lined pit and heating it to at least 650 degrees Fahrenheit, a process known as retorting. The resulting hydrocarbons will be collected from the bottom of the pit, and the oil vapor will be condensed back into oil.

Operating on private lands, the company will work on football-field-sized areas on its 17,000-acre lease. Once the oil is extracted from the plot, the company will reclaim the area by reseeding it with vegetation.

Red Leaf officials say the process, known as EcoShale In-Capsule Technology, is designed to produce transportation-grade fuels from oil shale, oil sands, coal, lignite and biomass.

Enefit American Oil is the U.S. branch of the Estonian national energy company Eesti Energia. The Estonian firm created the U.S. subsidiary last year after it acquired Oil Shale Exploration Co. (OSEC), along with the company's large tracts of private lands in Utah. Enefit estimates that its state, federal and private leases hold 2.6 billion barrels of oil equivalent.

The company is seeking state and federal permits to use an advanced oil shale retorting technology that Eesti developed during 30 years of oil shale development in Estonia.

Under the process, the company will crush the mined rock and heat it to produce a hydrocarbon vapor. As the vapor is cooled, it's separated into oil and gas. The resulting hot ash is used to drive the heating process on the next batch of oil shale rock.

"We don't use any external energy," explained Rikki Hrenko, CEO of Enefit. "The process is self-sufficient once started up. The oil shale itself is able to deliver all the heat that's needed for the process."

Royal Dutch Shell has been researching oil shale extraction technologies for more than 30 years, and has been actively operating in Colorado since 1996. Seven years ago, the company produced 1,700 barrels of oil from a 30-by-40-foot test area, called the Mahogany Demonstration Project South.

The Mahogany technology entailed building an underground freeze wall around the oil shale test site, pumping any subsurface water out of that plot, and heating the oil shale rock vein for four years to 650 to 700 degrees Fahrenheit. Although Shell owns three federal oil shale leases in the Piceance Basin, the project was conducted on privately leased lands.

The company is currently closing down that project and plans to conduct further tests on the technology in Jordan.

Meanwhile, Shell will field-test a new multimineral extraction technology, this time on one of the company's federal leases. That study will focus on extracting hydrocarbons from the underground oil shale rock, while also mining the nahcolite -- commonly known as baking soda -- located near the shale.

The researchers will dissolve and extract the nahcolite before inserting an underground heating system into the cavity left by the mineral. Oil created by heating the oil shale kerogen will be pumped to the surface. No freeze wall is needed for the multimineral test because it's located well below the water table, according to Carolyn Tucker, a Shell spokeswoman.

The company will begin extracting the nahcolite this summer and expects to see preliminary oil production in one to two years, Tucker said.

American Shale Oil LLC, known as AMSO, is a partnership of Genie Energy and Total, a French energy company. Operating on a federal lease in Colorado, the company is testing a new technology on an oil shale formation located under a clay-rich layer of earth. AMSO experts say the clay will provide an impermeable barrier between the oil shale operations and local aquifers.

AMSO plans to drill vertical and horizontal wells, which will be used to heat the formation as well as to transfer heat by refluxing the oil generated by the process. The wells also will provide an avenue to collect the produced oil. The company expects to heat the rock for three to 12 months to produce oil.

AMSO is planning a six-month pilot test on the technology, which scientists expect will produce 1,000 barrels of oil. Eventually, the firm hopes to produce 100,000 barrels of oil each day.

Exxon Mobil is testing a process known as "Electrofrac," which company researchers sometimes refer to as the giant toaster.

Under the technology, the company will drill and hydraulically fracture a series of wells into an oil shale formation. Rather than use sand to prop open the fractured rock, the company plans to use a proppant that can readily conduct electricity. Once inserted into the fractured rock, the material would help spread heat through the oil shale formation. The oil produced in the process would be extracted through separate wells.

Exxon Mobil has been involved in the oil shale industry since the 1960s and is remembered in Colorado for closing down a massive oil shale facility in 1982.

The company won mineral rights to a tract of land in Colorado's Piceance Basin in 2010 and has been testing the Electrofrac process on private lands.

CO2 'flood' could coax long-dormant Mont. reservoirs to the surface

Scott Streater, E&E reporter Energywire Published: Monday, April 9, 2012

A $400 million project that would take industrial carbon dioxide emissions and pump them into an aging southeast Montana oil field to recover millions of barrels of petroleum could be the first of many such enhanced oil recovery operations in the state.

Denbury Resources Inc. has already started building a 232-mile-long pipeline that will carry CO2 from a central Wyoming natural gas plant to the Montana oil field, where the gas would be used to coax the long-dormant petroleum reservoirs to the surface.

The Plano, Texas-based company's enhanced oil recovery operation would capture CO2 emitted from ConocoPhillips Co.'s Lost Cabin Gas Plant in Fremont County, Wyo., and pipe it more than 200 miles to the Belle Creek oil field in southeast Montana.

The capture and reuse of the CO2 would remove as much as 1 million metric tons of the greenhouse gas annually from the atmosphere, and it could help revive the declining Bell Creek field, which began production in the late 1960s, said Jack Collins, Denbury Resources' executive director of investor

relations.

Denbury Resources -- the largest oil and gas operator in Montana -- estimates that by "flooding" the oil field with CO2, it could help pull up about 30 million barrels of oil that would otherwise be inaccessible. Collins said the company expects to reach a peak production of 15,000 barrels of oil a day by 2020.

"It truly is an opportunity to sequester CO2 permanently. From that aspect, it's clearly good for the environment," he said. "But there's also a very significant benefit to the U.S. economy in producing oil that would be otherwise stranded. This oil really wouldn't be produced through another method. If we didn't do a CO2 flood on it, there'd be a lot of oil left in the ground."

Indeed, oil industry and government officials say they are eager to see the pipeline built and the CO2 injection project begin operation, and they believe it could become a springboard for similar projects that would allow drillers to access potentially tens of millions of barrels of previously unrecoverable oil reserves in the region.

If successful, Denbury Resources plans to extend the CO2 pipeline northeast to the larger Cedar Creek Anticline oil field near Baker, Mont., Collins said.

Greg Dover, Denbury Resources' vice president of operations excellence, said last week during a speech at the Montana Energy 2012 conference in Billings that enhanced oil recovery across the entire region could yield an additional 200 million barrels of oil, according to the Billings Gazette.

"This whole area is saturated with oil wells, and we are going to flood the whole thing," Dover was quoted by the paper as saying.

Dave Galt, executive director of the Montana Petroleum Association, an industry trade group, said the promise of CO2 injection could boost oil production across southeast Montana.

"There's a lot of interest in this enhanced oil recovery method, and a lot of people are looking at it," Galt said. "And if [the Belle Creek project] is successful, it will be a big deal for Montana's long-term energy production future."

Reviving dormant oil fields
The Belle Creek oil field began production in 1967, and since then, it has produced more than 130 million barrels of oil, according to federal records.

But as the Belle Creek field aged, as is the case with all oil fields, the natural pressure in the oil reservoir slowly declined, and the volume of recoverable oil using traditional drilling methods and technologies began to dwindle. The oil field reached peak production in the mid-1970s.

Today, the oil field has about 100 producing wells that generate about 400,000 barrels of oil a year.

To recover as much of the remaining oil as possible requires enhanced methods of oil recovery, using water or CO2 gas, as is the case with Belle Creek. Pumping CO2 underground to coax oil to the surface is not new. Indeed, the process has been done successfully in Utah, Texas, Mississippi, Colorado, New Mexico, Oklahoma, Louisiana and Wyoming.

The Belle Creek enhanced oil recovery project, however, would be the first large-scale CO2 injection project in Montana, Collins said.

Denbury Resources plans to use existing oil wells, as well as some new wells, to pump the CO2 into geologic formations known to contain petroleum reserves. When the CO2 mixes with oil, it expands as much as three times in volume, nudging the oil out of deep pores, where it can be collected and pumped to the surface.

The Department of Energy has estimated that using this CO2 oil extraction technology could add 89

billion barrels to recoverable oil resources nationwide (Land Letter, Jan. 13, 2011).

The Denbury Resources pipeline will cross a patchwork of private and public lands, and much of the route either follows an existing pipeline corridor or tracks closely with an existing underground pipeline.

The Bureau of Land Management approved the pipeline project across federal lands last year, and Denbury Resources last year completed the first 117-mile stretch of the pipeline in Wyoming, Collins said.

The company plans to complete burying the last 115 miles of the 20-inch-diameter line by the end of this year, he said.

The company, which already runs an extensive system of CO2 pipelines along the Gulf Coast, wants to begin pumping CO2 through the Wyoming-to-Montana pipeline in early 2013.

At full capacity, the pipeline could carry as much as 775 million standard cubic feet of carbon a day to the Bell Creek field and perhaps farther north to other oil fields.

At Belle Creek, the injection of CO2 "would increase oil production of existing wells by as much as fivefold," according to a BLM analysis of the project.

Streater writes from Colorado Springs, Colo.

Utah drilling project earns praise from enviros

Scott Streater, E&E reporter Energywire Published: Monday, April 9, 2012

The Bureau of Land Management plans to approve a major new natural gas drilling project in northeast Utah, a move that's being hailed by government leaders and environmentalists as a blueprint for how to balance energy development and conservation.

At issue is Houston-based Anadarko Petroleum Corp.'s Greater Natural Buttes Area Gas Development Project, which calls for drilling up to 3,675 new natural gas wells over a 10-year period inside a nearly 163,000-acre section of BLM land in the Uinta Basin. In addition to the new wells, the project calls for the construction of 594 miles of new roads, 1,100 miles of buried and surface gas and water pipelines and 7 miles of electrical power lines, according to a final environmental impact statement (EIS) for the project released last week.

The agency, which has been reviewing the Greater Natural Buttes project since 2007, plans to issue a record of decision authorizing the project to move forward following a 30-day public review period ending May 7.

The agency is set to approve the project after Anadarko subsidiary Kerr-McGee Oil & Gas Onshore LP formally committed the company to a number of pollution reduction strategies designed to significantly curb its impact to regional air quality.

The pollution reduction strategies -- first outlined last summer in an agreement BLM developed alongside U.S. EPA -- call for implementing various technologies designed to capture or reduce fugitive emissions of natural gas and other pollutants that contribute to the basin's air quality problems (Land Letter, June 16, 2011).

But Anadarko officials also met with the Southern Utah Wilderness Alliance (SUWA) and have separately committed to limit the number of wells in and around wilderness-quality lands along the White River, among other things.

Steve Bloch, SUWA's energy program director, praised Anadarko's willingness to work with the group to make the project as environmentally benign as possible.

"We appreciate that Anadarko was willing to sit down with the conservation community, listen to our

concerns and work with us to arrive at a solution that protects the White River proposed wilderness area" while still allowing the drilling project to proceed, Bloch said.

Brad Miller, Anadarko's general manager of regulatory affairs, said the agreement is a common-sense solution that satisfies the environmentalists' concerns while boosting badly needed domestic energy production.

"The Greater Natural Buttes project demonstrates that by working cooperatively with stakeholders, we can deliver the significant, long-term economic benefits of these resources in a manner that protects air and water quality, wildlife, and the scenic quality of the White River and Greater Natural Buttes area," Miller said in a prepared statement.

Indeed, BLM Utah State Director Juan Palma said he wants the project to become "a model to others interested in finding balanced solutions to complex issues."

Protecting air quality
The project likely would not have been allowed to move forward without lengthy challenges if the company had not been willing to compromise.

The chief concern is air quality in the Uinta Basin, specifically ground-level ozone pollution.

The basin's air quality problems are linked to the relatively rare phenomenon called wintertime ozone, which scientists attribute to an unusual weather pattern marked by stagnant air hovering in the lower atmosphere. Accumulations of nitrogen oxides and volatile organic compounds are converted into ozone by sunlight and heat reflecting off snowpack on the ground.

Experts say most of the ozone precursor pollutants in the basin are coming from thousands of existing gas wells, compressor stations and other equipment.

Air quality monitors in the basin between January and March 2011 recorded dozens of days where ozone levels exceeded the federal health standard of 75 parts per billion, according to EPA data. That included a Feb. 16, 2011, average of 146 ppb over eight hours, nearly twice the federal standard and potentially dangerous air for even healthy adults to breathe (Land Letter, June 16, 2011).

This year, a relatively warm winter and low snowpack levels prevented the kind of weather patterns that have driven the basin's wintertime ozone. But the air quality concerns remain, and the company's commitment to take steps to help reduce pollution makes the final EIS "a good document," said Jim Martin, EPA's regional administrator in Denver.

Anadarko, among other things, has committed to use electric-powered compressor engines and to install a closed-loop pipeline system linking the wellheads to collector lines that in turn route the gas to market. The seamless pipeline system should significantly reduce fugitive gas emissions.

In addition, Martin noted, "BLM and EPA worked closely to address environmental and public health concerns, including measures that will protect air quality" as the gas field project is developed.

Those include a commitment to take a number of additional steps in the event that the basin's ozone pollution worsens after the project is under way, such as installing emission controls on condensate storage tanks and on valves and other equipment to reduce inadvertent emissions.

"Anadarko's project is a great example of a domestic energy project with essential safeguards," Martin said.

Click here to read the final EIS. http://www.blm.gov/ut/st/en/fo/vernal/planning/nepa_.html

Streater writes from Colorado Springs, Colo. Energywire

Pa. DEP picks former EPA staffer to be regional director

Pamela King, E&E reporter Energywire Published: Monday, April 9, 2012

Cosmo Servidio, former chief of staff to U.S. EPA's Region 2 administrator, joins the Pennsylvania Department of Environmental Protection today and will become the agency's Southeast regional director when current Director Joe Feola retires this summer, DEP Secretary Mike Krancer announced last week.

Krancer said he expects Servidio's experience as a mediator on tough environmental issues will be an asset for DEP.

"Cosmo has great experience in the public and private sectors, and he brings a track record of creative problem solving of complex environmental regulatory and policy matters to us at DEP," Krancer said. "He is also very accomplished at working with all stakeholders in the process. We are delighted to welcome him to our team."

To facilitate a smooth transition, Servidio will work closely with Feola during the next three months, Krancer said.

Feola is set to retire July 2 after 43 years of service to the Pennsylvania government. Feola has spent 41 years with DEP, and during that time, the agency has had to wade through controversies stirred by the state's shale boom.

Although DEP has recently raised state drilling fees and doubled its regulatory staff, the agency has fielded criticism that its policies on natural gas development are too weak (Greenwire, Nov. 14, 2011).

Pa. natural gas rights case could lead to industry turmoil

Energywire Published: Monday, April 9, 2012

Pennsylvania's Supreme Court will hear a landowner dispute over Marcellus Shale natural gas rights that has the potential to affect thousands of drilling leases in the Keystone State.

The dispute stems from an 1881 deed transferring the oil and mineral rights for a 244-acre land tract in Susquehanna County to the heirs of a man named Charles Powers. The Powers heirs say that since Marcellus gas is suspended in underground rock and does not flow freely to the surface -- unlike gas from oil wells planted in the 1880s -- it should be considered a mineral and is therefore part of the rights conveyed to them by their benefactor.

But plaintiffs John and Mary Butler, who own part of the land affected by the Powers will, filed a lawsuit in 2010 to claim full rights to the shale gas that lies beneath their property. According to an 1882 state Supreme Court decision known as the Dunham Rule, surface owners like the Butlers own the oil and gas under their land unless there is some arrangement stating otherwise, said David Fine, a Pennsylvania lawyer at K&L Gates LLP.

What the Pennsylvania Supreme Court must now decide is whether natural gas should be considered a mineral under the Dunham Rule.

"If the Supreme Court were to revisit the Dunham rule and modify it in any meaningful way, it would have the potential to cause significant chaos in the oil and gas industry in Pennsylvania," Fine said. "People in Pennsylvania have understood that this is the way you wrote deeds since the 1880s."

In September, an appeals court decided the state law was unclear on how to handle shale gas rights and ordered the trial court, which previously returned a verdict in favor of the Butlers, to solicit a scientific opinion on the matter.

Oral argument before the state Supreme Court is probably months away, said Greg Krock, an attorney for the Butlers (Pearson/Lee, Bloomberg, April 4). -- PK

Activists Fear EPA Could Weaken Fracking Controls In Drilling Air Rules

Insdie EPA Posted: April 6, 2012

Environmentalists fear that EPA appears increasingly likely to either soften or drop its proposal to mandate “green completion” emissions controls at new hydraulic fracturing operations and other drilling sites in pending air rules for the sector, with EPA facing major industry pressure to soften the controls ahead of the rule's imminent release.

EPA recently won a brief extension -- from April 3 to April 17 -- to a consent decree with environmentalists setting a deadline for issuing the final package of performance and air toxics standards for oil and gas drilling operations. One environmentalist says activist groups “grudgingly” agreed to the extension, but now fear EPA will use the extra time to water down the rules due to administration concerns about the regulations being framed as causing fuel price increases.

Industry groups have held several meetings with EPA and White House Office of Management and Budget (OMB) officials in recent weeks, calling on the agency to soften the rules' emissions limits and extend the compliance deadlines. At the meetings, industry representatives have warned about the high costs and feasibly of the rules. Critics say a lack of equipment for meeting the rules could dramatically slow the pace of fracking, causing natural gas price hikes.

One environmentalist says that the industry lobbying, combined with EPA's slight delay in issuing the rule, signals that the agency might be poised to grant industry's request to soften the rulemaking package compared to the proposed version of the new source performance standard (NSPS) and air toxics rules EPA released in July.

The proposed NSPS would mandate the use of green completion, a process already in use in several states through which companies capture gases released during fracking well completion. That gas can then be processed and sold at a profit, EPA says in a fact sheet on the proposal. While environmentalists had urged EPA to regulate methane under the rule due to its global warming impacts, the agency has said it was not likely to directly regulate methane, saying instead it expects to see industry limit emissions by using technologies to address traditional pollutants.

Despite bypassing methane requirements, critics say the agency is overstepping its Clean Air Act authority by targeting for the first time low-emitting equipment at drill sites through green completions.

The environmentalist says EPA's green completion mandate for wells used for fracking appears vulnerable to changes -- which could come in the form of a two-year phase-in period as advocated by the American Petroleum Institute (API), or by scrapping the green completion mandate altogether. EPA is also facing pressure from industry to amend its volatile organic compound (VOC) requirements in the final rule by establishing a minimum emissions threshold below which the limits would not apply.

In response to questions from Inside EPA, an agency spokewoman says, “EPA continues to work to comply with a court deadline, requiring final standards by April 17, 2012,” adding the proposed standards are “cost-effective,” and noting the agency had to sift through over 150,000 comments received in response to the proposal. EPA argued for more time to issue the rule in part to “respond fully” to the significant comments on the rules.

Industry Lobbying

Representatives from ExxonMobil, Shell, Chevron and other major companies and the industry organization API met with OMB and EPA March 22 to discuss the rule.

Industry briefing papers for the meeting outline demands for changes to the NSPS, including to delay application of the rule by three years for storage vessels in order to “design, manufacture and certify sufficient number of control devices,” according to an API presentation given at the meeting. The group asks for a two-year delay to the green completion requirements to “manufacture the necessary equipment and train personnel safely conduct this operation,” and two years for provisions applicable to pneumatic controllers, again because of concerns over availability of equipment.

API also urged EPA to exempt wells with less than 10 percent VOC content by weight from the mandate for green completions, also known as reduced emissions completions (RECs). API also raised a range of technical concerns with EPA's rule, including recordkeeping and performance testing requirements API sees as too onerous.

An API source say the group does not oppose green completions, but wants more time to have to comply with the mandate. “We have asked for a phase-in period, and we have asked for a VOC threshold,” the source says. API contends that green completion is not economically justifiable for wells emitting very low VOC levels.

In a March 2 letter to EPA, API said that wells with less than 10 percent VOC by weight should be exempt from the REC requirement. The group sent a similar letter March 28 to senior White House advisor Valerie Jarrett.

America's Natural Gas Alliance (ANGA), representing larger independent drilling companies, has estimated that 93 percent of the wells being drilled by its members are already using green completion, and that EPA in its proposed rule substantially underestimated the number of wells using the technology. This miscalculation in turn led EPA to overestimate methane emissions from drilling, ANGA says. API, meanwhile, says ANGA's estimates for RECs do not reflect the true conditions of oil and gas drilling operations nationally.

ANGA and API do generally agree on the need for a phase-in period for the REC mandate and also concur on the poor cost-effectiveness of using RECs to cut VOCs from gas streams that have very low VOC content. Industry generally also has concerns over other aspects of the rules, among them emissions limits proposed for storage tanks.

Industry groups also agreed in comments that REC is not possible in many situations because of the geological circumstances of certain wells, and that EPA in its proposal has not taken this sufficiently into account.

Environmentalists in a March 30 letter to EPA, however, warned against the agency exempting low-VOC wells from REC mandates, saying, “[I]ndustry's last-minute attempts to weaken the rule -- citing lower emission numbers and higher costs -- are unfounded, and its suggested de minimis exemption is unlawful.”

Officials from the Western Energy Alliance -- representing 400 oil and gas companies -- and several oil and gas companies also met March 23 with OMB and EPA staff to push back on the agency's VOC limits.

The Gas Processors Association met with OMB March 27 outlining similar concerns, saying the strict proposed standards are not warranted for small sources. -- Stuart Parker (sparker@iwpnews.com)

Second Set of Pennsylvania Test Results Shows Drinking Water Is Safe，EPA Says

BNA Daily Environment Report

PHILADELPHIA—Results of tests for contaminants in drinking water from 20 private wells near Dimock, Pa., based on samples taken between Jan. 30 through Feb. 3 show the water is safe to drink, the Environmental Protection Agency said April 6.

EPA collected water samples between Jan. 23 and Feb. 15 from a total of 61 wells in the northeastern Pennsylvania township, where methane in groundwater was linked to nearby natural gas drilling by Cabot Oil and Gas Corp. in 2009.

In a March 15 announcement of test results for samples taken from 11 wells during the first week of sampling, EPA said none of the dozens of pollutants that were measured were present in levels that present a health concern (52 DEN A-9, 3/19/12).

Results were similar for the 20 wells sampled during the second week of testing.

“This set of sampling did not show levels of contaminants that would give EPA reason to take immediate action,’’ EPA spokesman Roy Seneca said in a statement.

Some Pollutant Levels Trigger Risk Assessment
Water samples from five of the 20 homes showed the presence of sodium, methane, or lithium at levels that triggered additional review by an EPA toxicologist to determine if the amount presents a health concern.

Federal and state regulators have not established maximum contaminant levels for those compounds in drinking water.

The sample of kitchen tap water from one home had arsenic at slightly below the maximum contaminant level and will be retested, Seneca told BNA.

Another well had relatively high levels of lead and fecal coliform bacteria, but Cabot is already supplying the home served by that well with an alternate supply of drinking water, he said.

Until EPA has results from a second round of sampling and testing, the federal agency will continue providing temporary alternate water supplies to the three homes in the first week of sampling whose water test results suggested arsenic or chromium levels might pose a health concern, Seneca said.

EPA Intervention Follows State Action
The Pennsylvania Department of Environmental Protection in 2009 held that faulty casing and cement in natural gas wells Cabot drilled near Dimock had allowed methane to migrate to groundwater and into private drinking water wells.

Under terms of a settlement with DEP, Cabot provided an alternate water supply to 19 homes until Nov. 30, 2011, when DEP determined that the company had satisfied the conditions of the settlement and allowed Cabot to end the water deliveries.

Dimock residents who maintain their water is unfit to drink succeeded in getting EPA involved, after the federal agency reviewed data the homeowners provided that suggested gaps in water sampling and sample results.

In a statement issued after EPA released the latest sampling results, Cabot said the EPA data are consistent with water quality data accumulated by state and local authorities and by Cabot, which has consistently denied responsibility for the methane in Dimock water wells.

“Importantly, the EPA again did not indicate that those contaminants that were detected bore any relationship to oil and gas development in the Dimock area, particularly given the fact that any contaminants are more likely indicative of naturally occurring background levels or other unrelated activities,’’ Cabot said.

By Lorraine McCarthy
For More Information
Water test results for the first 31 of the 60 Dimock-area wells where EPA collected samples in January and February are available at
http://www.epaosc.org/sites/7555/files/Dimock%20Week%201%20and%202.pdf.

Grisanti proposes fracking safeguards \ Bill would prohibit treatment of water at public facilities
Buffalo News, The (NY) - Saturday, April 7, 2012
Author: Charlie Specht - NEWS STAFF REPORTER

State Sen. Mark J. Grisanti on Friday announced legislation that would prohibit treatment of water from hydraulic fracturing at public facilities statewide, create a tracking program for the waste and enact other environmental safeguards.

But Grisanti, chairman of the Senate Committee on Environmental Conservation, said he would not support or oppose the controversial gas drilling process until the state completes its final environmental impact study.

"It's preliminary," he said. "It's too early to tell."

As Grisanti was confronted by environmental activists demanding a complete ban on fracking , his chief political opponent called for more education on the issue before any action is taken.

"We need to see the full scope of their final draft of regulations before we rush to start the drilling," former Erie County Legislature Chairman Charles M. Swanick said as he urged consideration of alternative energy methods.

While four environmental groups lauded Grisanti for the environmental safeguards, a vocal cohort of anti-fracking activists and Occupy Buffalo protesters gathered Friday in the Mahoney State Office Building to pepper him with questions about the effects of fracking .

"I have encountered no single issue as critical, controversial and important as high-volume hydraulic fracturing ," Grisanti said. "Should the DEC ultimately decide to allow for [fracking], I strongly believe environmental safeguards are needed."

Green groups Citizens Campaign for the Environment, Earthworks, Environmental Advocates of New York and Natural Resources Defense Council applauded Grisanti for "recognizing the lack of oversight and real dangers associated with fracking wastes."

But organizers from Food & Water Watch, who held large anti- fracking signs during Grisanti's news conference, said it didn't go far enough.

"There is more to fracking than the waste it creates, and these bills do not take that into consideration," said Rita Yelda, the group's organizer. "The legislation introduced by Senator Grisanti is full of loopholes and would fail to protect Western New Yorkers from fracking 's threats to our health, economy and environment."

Dan Cantor, executive director of the Working Families party, said the bills "pave the way" for statewide fracking to begin.

If passed, the legislation would appear to put an end to efforts to treat the fracking fluid at wastewater treatment plants in Niagara Falls or North Tonawanda, which officials have said are capable of treating such water.

"In my opinion, they don't have the capacity," Grisanti said. "They can pretreat it, but you don't want the end result to be dumped in the Niagara Gorge."

He said a private treatment plant is being built in Pennsylvania to treat the fracking water from Pennsylvania, Ohio and other places where the Marcellus Shale makes gas drilling especially lucrative.

Grisanti's legislation also aims to prohibit the use of wastewater for road- and land-spreading; create an oil and gas waste tracking program stronger than one proposed under the draft environmental impact statement; strengthen notification requirements for wastewater spills and create a geographic information system for the public on gas and oil production.

The state Department of Environmental Conservation is expected to finalize its environmental impact statement and could make a decision on fracking as early as July.
email: cspecht@buffnews.com
Caption: John Hickey/Buffalo News State Sen. Mark J. Grisanti speaks during a news conference in the Walter J. Mahoney State Office Building Friday.

ChemEOR Assigned Patent
Targeted News Service (USA) - Monday, April 9, 2012
ALEXANDRIA, Va., April 9 -- ChemEOR, Covina, Calif., has been assigned a patent (8,146,666) developed by Hongxin Tang, Walnut, Calif., for a "surfactant method for improved oil recovery from subterranean reservoirs." The abstract of the patent published by the U.S. Patent and Trademark Office states: "A method to enhance oil recovery from a subterranean reservoir, the reservoir being accessible via a production well. The method includes injecting a surfactant solution that includes surfactants into the production well. The surfactant solution selected to increase an oil-to-water ratio of oil recovery from a porous matrix portion of the reservoir. The method also includes injecting a well-servicing volumetric solution into the production well to perform a second well treatment process. The second well treatment process is selected from the group consisting of a scale inhibition squeeze process, a well acidizing process, a chemical process to reduce water production rate, an acid fracturing process, and a hydraulic fracturing process. In the method, the surfactant solution and the second well treatment solution are injected into the production well within less than about six months of one another."

The patent application was filed on July 24, 2009 (12/460,767). The full-text of the patent can be found at http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=8,146,666&OS=8,146,666&RS=8,146,666

Written by Kusum Sangma; edited by Anand Kumar.

Lawsuit seeks disclosure of fracking compounds
Wyoming Tribune-Eagle (Cheyenne, WY) - Monday, April 9, 2012
Author: Trevor Brown

bkm

Lawsuit seeks disclosure of fracking compounds

Groups want Wyoming to release more details about chemicals used in drilling process

At a glance

Environmental groups have filed a lawsuit to force the Wyoming Oil and Gas Conservation Commission to release documents listing the products and chemicals companies use in the hydraulic fracturing process. The state says the records are trade secrets and are exempt from public records laws.

By Trevor Brown

tbrown@wyomingnews.com

CHEYENNE - A group of Wyoming residents and environmental activists wants the state to release more information about the type of chemicals used in the hydraulic fracturing oil drilling process.

The Powder River Basin Resource Council, Wyoming Outdoor Council, Earthworks and OMB Watch filed a lawsuit in district court claiming the Wyoming Oil and Gas Conservation Commission unlawfully withheld documents detailing the chemicals that companies have used.

The complaint argues that the commission violated Wyoming's public records laws by not releasing information that the state claims is protected because it is considered trade secrets.

State law requires companies to disclose all chemicals that are used in the drilling operations.

However, the Wyoming Oil and Gas Conservation Commission can exempt the information from public disclosure if the companies successfully argue that compounds or mixtures are proprietary trade secrets.

Shannon Anderson, a lawyer for the Powder River Basin Resource Council, said the state has too loosely

approved many of the public records exemptions.

"Basically the issue is that we are just getting a lot of generic information coming from the companies," she said. "We do not believe the companies have fully justified that the exemptions (for the specifics of the chemicals being used) are essential."

The Wyoming Oil and Gas Conservation Commission approved 50 trade secret or confidential commercial information exemptions in 2010 and 2011, according to the lawsuit.

"Many of these claims were insufficiently justified and/or sought confidentiality for information that is not within the proper scope of Wyoming's trade secret or confidential commercial information exemptions," the complaint states. "Nonetheless, (the Wyoming Oil and Gas Commission) approved nearly all such claims."

Tom Doll, supervisor of the Oil and Gas Conservation Commission, said the state has followed the disclosure laws that were put in place in September 2010.

"What this boils down to is a difference of opinion on the interpretation of the Wyoming Public Records Act," he said.

Doll said the commission looks forward to seeing if its interpretation of the law is justified. If not, he said the commission would change its procedures to comply with any court orders.

Wyoming was the first state to pass a law requiring companies to disclose the chemicals used in the drilling operations to state officials.

Marilyn Ham, a Cheyenne resident and Powder River Basin Resource Council member, said making sure the state upholds the law is particularly important as the Niobrara oil play ramps up in the southeastern part of the state.

Ham lives near the North Star Ranch subdivision, north of Cheyenne, where a lot of the drilling speculation is taking place.

Ham said she and many of her neighbors have the right to know what type of chemicals are being used near their homes.

"I believe we are entitled to know what is in the ground so that we can protect our water," she said.

She acknowledged that the companies also have the right to protect their proprietary information. But she said they can't hide behind that argument to keep much of the information away from the public.

"Look, even the Food and Drug Administration requires companies to list their ingredients, like what is listed on a can of soup," she said. "We are not asking for the exact measurements or their recipes. We just want to know what could end up in our water.

"Also, this way, if you think your water is contaminated, you could then have it tested and know what to look for."

Doll said there is no timetable for the next steps in the legal proceedings, but he said it could take weeks until a court date is established.

He added it is possible that some of the oil and gas operators could join the state's defense.

Non-environmental effects of gas exploration - GUEST ESSAY THE FIGHT OVER FRACKING
Daily Messenger (Canandaigua, NY) - Sunday, April 8, 2012
Author: JOHN CHAMPLIN and JIM HAGEN

I n the last several months, the level of discussion about high-impact slick water drilling for gas, frequently called hydrofracking , has increased to a fever pitch. People on both sides have strongly-held opinions.

There is a great deal of pressure on towns to protect themselves against hydrofracking . There is a lot to know.

Without taking a stand for or against the process, it seemed like having as much information as possible was an important responsibility for a town and its citizens. Therefore, several of us from West Bloomfield decided to drive to Pennsylvania to see for ourselves, firsthand, what all the shouting is about.

Lawrenceville, Pa. is a small rural town, not unlike West Bloomfield and similar in population. We also visited Elkland to the west, Mansfield to the south and Towanda to the east.

The first thing that strikes you is the amount of truck traffic. Each well requires thousands of gallons of water, delivered by a parade of heavy trucks that operates 24 hours per day. Trucks are everywhere. There are parking lots full of trucks, heavy equipment, piles of pipe, huge valves, and miscellaneous equipment. We saw lots of signs offering property to rent or lease for the parking of these vehicles.

Elkland and Lawrenceville residents told us individual members of each community were making lots of fast money. Any rental housing, mobile home lots, RV parking spaces or even side yards where an RV might be parked, are full. Local people have been priced out of the area. The 911 call center has had a huge increase in the number of calls.

Because of the increase in truck traffic, there has been an enormous increase in automobile/ truck collisions.

They have frequently been very serious, and the local fire departments have not had the equipment needed to deal with it. There has been a huge strain on the local emergency services. People who once would have been available to help have been hired by the oil companies, leaving the volunteer services without the personnel needed when an emergency arises. There have also been several hazardous materials spills which the local fire departments have not been prepared to deal with. Specialized gear and training have put an additional strain on already overstretched volunteers. One smalltown fire department eventually bought a trailer to haul their hazardous materials response equipment and had to raise the money themselves. We were told that these small towns were completely overwhelmed by the side effects of drilling. The social services, emergency services and governmental services have been sorely taxed.

The schools have been strained:They are dependent on property taxes for their support, and income from gas/ oil is not reflected in property tax. Income taxes from the wages of the new, higher paid workers will not help local governments and in many cases even the state will get no benefit because these workers are from out of state and carefully maintain their non-resident status.

The drilling appears to be a very small physical part of the issue but may have enormous environmental consequences. All the things that surround it are more telling. These are the things that need to be planned for in a way that allows a community to control its own destiny. Even if a town prohibits gas and oil drilling, it is no protection for the effects of a boomtown. The potential for major disruption is staggering, then in two years when the drilling phase is over, the towns will be left with the fallout. We were told that things happened so quickly there was no time to react. Small towns were overwhelmed before they even had time to think about it.

We, in Ontario County, do have time to think about it, but not as much time as we thought. There is much to be considered. In Pennsylvania, the control of the roads is a state function. In New York, towns and counties have control of their roads. If the roads are going to see the huge increase in industrial traffic that they were not designed for, the towns and county need to have decided how they want to handle it.

Will the towns expect the citizens to pay for the road repair and upkeep or do they wish to require a letter of credit from the industrial user? Will the local fire departments, EMS providers or hospitals be equipped

to handle the type and volume of calls that may be generated by a rapid increase in population and industrial uses? When volunteer emergency services personnel can be paid generously to work for an oil company, who will be available to staff the local fire department or ambulance? Could a drilling company be required to provide emergency personnel at their cost? Do local laws cover the placement or parking of trucks, equipment or recreational vehicles? Are sufficient law enforcement personnel available to handle a large increase in demand for their services? Who pays? When the boom is past, in a year or two, what will the town/ county be left with? Can we plan for the possibilities so that we will be better off when the boom changes to bust? Have plans been made to consider where the water used for drilling might come from? Does anyone have answers for where the wastewater or drilling fluids can be safely disposed of? What is the appropriate way to handle the parking areas after they are no longer needed? What happens to equipment and supplies that are left behind? When gathering pipelines are needed and connections to larger pipelines are constructed, what will the effects be? Are laws in place to control any of these things? What do the municipalities need to do to generate sufficient income to offset the demands for services? If the state handles things appropriately, the possibility of a considerable amount of tax money could be available, but the state controls the tax issue and the expenses are going to be occurred by towns and counties. Planning and cooperation is key to handling these issues and proper planning takes time. We need to start now and use our time productively.

John Champlin is West Bloomfield's town supervisor, and Jim Hagen is a West Bloomfield town councilman.
Caption: JULIE SHERWOOD/ MESSENGER POST FILE PHOTO West Bloomfield Town Supervisor John Champlin shows photos from a recent trip he made to Tioga County, Pa., where small communities are hosting fracking operations.

A look at four gas companies
Dominion Post, The (Morgantown, WV) - Sunday, April 8, 2012
Author: David Beard, The Dominion Post, Morgantown, W.Va.

April 08--Nineteen companies hold Marcellus gas permits in Monongalia, Preston and Marion counties.

Some are international firms or subsidiaries of major national or multinational firms.

Some are smaller, based in West Virginia or other states.

The Dominion Post

talked to and researched four of the largest to get an outlook for gas operations for the coming years.

Chesapeake Appalachia

Chesapeake Energy ranks No. 2 on the Natural Gas Supply Association's (NGSA) list of U.S. Top 40 Producers and operates in 17 states.

Chesapeake Appalachia is its local subsidiary and holds more well permits than any other single firm in the three-county area, according to a search of the state Department of Environmental Protection's (DEP) well permits.

Chesapeake Appalachia holds seven of the 14 permits in Mon County, with two others pending. It holds 13 in Preston and 12 in Marion, with two permits pending in each.

The company did not provide any comments, but supplied a thick volume of printed outlook materials.

With gas prices at a 10-year low and still falling, Chesapeake is switching its nationwide focus from dry gas (methane) to wet gas (methane plus ethane, butane and propane).

In West Virginia, the wet gas underlies the counties along the Ohio River, up into the Northern Panhandle.

The wet gas byproducts add profit as the dry gas prices barely top production costs industry-wide.

Chesapeake will cut its dry gas rigs from 47 to 24 nationally by the second quarter of 2012 -- 12 in the northeastern Pennsylvania Marcellus, six in the Haynesville (Texas-Louisiana) and six in the Barnett (Texas).

Its dry gas drilling spending will fall from $3.1 billion in 2011 to $900 million for 2012 -- the lowest level since 2005.

The company plans to curtail about 8 percent of its daily dry gas production, and will double that if need arises.

When possible, it will defer completion of drilled dry gas wells, and defer pipeline connections of completed dry gas wells.

CEO Aubrey K. McClendon said, "We have committed to cut our dry gas drilling to bare minimum levels" until dry gas prices rise to levels competitive to the wet gas plays.

In 2009, wet gas made up 10 percent of drilling capacity, 8 percent of its production and 12 percent of its revenue. In 2013, it estimates the wet gas will make up 85 percent of its capacity, 30 percent of its production and 55 percent of its revenue.

Chesapeake owns the largest total U.S. inventory of shale play leaseholds -- 2.2 million acres -- and is No. 1 in several, including the Marcellus.

Chesapeake remains optimistic about the future.

Power companies are reducing their coal-generation capacity and increasing their natural gas.

It estimates that the current 300,000 megawatts of coal generation capacity will fall by 40,000 to 70,000 megawatts by 2020, to be replaced by 6-12 bcf (billion cubic feet) per day of gas power.

Chesapeake will be among the nation's natural gas producers exporting liquefied natural gas in the coming years.

And Chesapeake is helping to lead the charge to end the nation's foreign oil dependence by promoting vehicles powered by compressed natural gas (CNG) or bi-fuel diesel natural gas (DNG) vehicles.

Chesapeake is already working with General Electric to deploy more than 250 of GE's CNG in a Box fueling systems for fueling stations across the country.

Chesapeake chipped in $160 million to a $400 million Clean Energy Fuels initiative to add natural gas pumps to 300 truck stops; 1,000 more would complete a national network. It predicts that rising oil prices will help drive the demand for cheaper CNG and DNG fuels.

A map showing a completed network in 2013 shows no truck stations in West Virginia, but one in Pittsburgh, one in Virginia near Bluefield and another in Virginia on I-81 at the base of the Eastern Panhandle.

It predicts public CNG stations at such places as Kroger, 7-Eleven, GetGo and Sheetz, among others.

Ford, Dodge and GM are introducing DNG trucks and vans this year, it said, and some major truck engine makers are developing DNG engines.

XTO Energy

ExxonMobil and its natural gas subsidiary XTO Energy rank No. 1 on the NGSA's Top 40 list. XTO has 25 well permits in Marion County, with three more pending.

XTO's public affairs office reports it has nearly 735,000 acres for the Marcellus and Utica, covering Pennsylvania, West Virginia, Ohio and southern New York.

It produces about 180 mmcf (million cubic feet) per day with six active rigs.

Nationally, XTO has more than 6.1 million acres and produces more than 81 tcf a year.

ExxonMobil has touted its environmental consciousness by helping create the FracFocus website -- an online registry where operators can disclose their frack fluid chemicals.

As the shale gas industry slowly gains a foothold in Europe, ExxonMobil in early March called for a systematic fracking fluid disclosure program for that continent.

Company CEO Rex W. Tillerson said in a release, "A comprehensive disclosure program allows citizens and communities to consider this technology with a strong factual foundation. We believe that will lead to open discussion about environmental protection and risk management, and the potential benefits of shale development in Europe."

ExxonMobil predicts that by 2025 gas will overtake coal as the No. 2 global energy source, behind oil.

Demand for natural gas will grow by 60 percent, the company says in its "The Outlook for Energy: A View to 2040."

Unconventional gas will supply about 30 percent of the natural gas total, compared to 10 percent now.

Oil and natural gas will provide 60 percent of the world's energy.

Coal demand will peak in 2025 and then decline 10 percent by 2040, the company predicts.

Less than 30 percent of electricity will come from coal, compared to 40 percent now. Natural gas will supply 30 percent of the share of commercial and residential energy in developed countries.

By 2040, conventional fuel vehicles will make up only 50 percent of the total. Gas-electric hybrids will make up another 40 percent, and CNG and other natural gas vehicles will make up 5 percent. Today, gas fuel fills about 2 percent of the demand.

But more efficient vehicles will cost more. By 2030, hybrids will cost $1,500 more than a conventional equivalent; CNG cars $4,000 more; and allelectric (such as the Nissan Leaf) about $12,000 more. Electric car drivers, though, would eventually recoup their costs through fuel savings.

EQT Resources

Pittsburgh-based EQT ranks at No. 20 on the NGSA's Top 40 list. Its EQT Production subsidiary has two permits in Monongalia County and three in Marion County.

It has employees in Pennsylvania, West Virginia, Kentucky and Virginia, with West Virginia ranking second with 427 and a payroll of $39 million.

EQT has leaseholds to a total 532,00 acres -- 250,000 in Pennsylvania, with 91 wells; 279,000 in West Virginia, with 41 wells. It holds 190,000 wet gas acres and 342,000 dry gas acres.

Driven by Marcellus operations, the company's production increased by 44.4 percent from 2010 to 2011, reaching 194.4 bcf. About 42 percent of its production sales volumes came from Marcellus wells -- an 18.9 percent increase over 2010.

EQT production has 5.4 tcf of proven reserves, 3.4 tcf of that in the Marcellus. It projects sales volumes to 250 bcf for 2012 and plans to drill a bit more than 130 new Marcellus wells in West Virginia and Pennsylvania in 2012.

EQT told The Dominion Post that "West Virginia is very attractive to EQT's operations due to their wet gas resources, especially in today's lowpriced natural gas environment." In 2011, EQT drilled 31 wells in Doddridge, Wetzel, Taylor and Lewis counties. In 2012, EQT plans to drill about 45 new wells in Doddridge and Wetzel Counties. Its midstream subsidiary plans to spend $130 million in 2012 for transmission and gathering lines and a compressor station in Monongalia County.

EQT opened a CNG fueling station in Pittsburgh's Strip District in July, and targets 1,500 customer vehicles to be based within five miles. It spent $1.6 million on the station, coupled with a $700,000 state grant.

CNX Gas Co.

CONSOL Energy reports it is the leading eastern U.S. gas producer. Neither it nor its subsidiary, CNX Gas Co., appear on the Top 40 list. CNX has three permits in Preston County. One is listed as abandoned and one was never drilled. CONSOL now has one active drilling rig in Marshall County.

CONSOL holds the rights to 750,000 acres in the Marcellus and 200,000 in Ohio Utica.

It also has shale holdings in Tennessee, Virginia, Northeast Kentucky, Indiana and Illinois. All told it has 3.7 tcf of gas reserves and operates more than 12,500 wells, including conventional wells, and produced 18.6 bcf of gas in West Virginia in 2010.

"Despite the current low price of natural gas," spokeswoman Lynn Seay said, "CONSOL Energy anticipates growing our Marcellus gas volumes by 40 percent in 2012 with a shift of focus to the liquids-rich gas areas of the Marcellus shale, and has allocated more resources to those operations. CONSOL had zero well completions in the wet gas areas in 2011; we anticipate that 24 percent of our Marcellus completions in 2012 will be in wet gas.

"CONSOL Energy is on track to meet our total company production 2015 target of 350 bcf, which remains unchanged from our 2011 projections."

For 2012, CONSOL expects to spend $575 million developing its Marcellus assets.

Partnering with Noble Energy (No. 23 in the Top 40), it will drill 122 Marcellus wells -- 39 of those in the wet gas areas.

Seay said Noble will operate in Marshall County and they expect an additional two rigs to be operating in West Virginia in 2012. "CONSOL will be operating in Barbour and Upshur counties and we anticipate having one rig operating in those areas in the first half 2012."

CONSOL will also spend $50 million to partner with Hess Corp. (No. 40) to drill 22 Utica wells, all in wet gas or oil areas in Ohio.

It sold 50 percent of it Utica acreage to Hess as part of the partnership deal.

Right now, its dry-wet well proportion is 80-20. By the end of the year, it projects that to be 50-50.
Memo: ---

W.Va. legislators may revisit, study drilling laws

Dominion Post, The (Morgantown, WV) - Sunday, April 8, 2012
Author: David Beard, The Dominion Post, Morgantown, W.Va.

April 08--West Virginia legislators passed the Natural Gas Horizontal Well Control Act in December, but many questions remain.

Surface owner rights, including the leverage to negotiate placement of well pads and infrastructure, were not addressed. Although the legislation defined setbacks from water supplies and homes, and operators' liability for water contamination, those questions remain unsettled and legislators are working on new bills.

The state Department of Environmental Protection (DEP) is studying the effects of four pollutants -- noise, light, suspended dust and volatile organic chemicals -- relative to well setbacks from dwellings.

A summer interim study may follow up on results of a U.S. Environmental Protection Agency (EPA) review of the reason fracking chemicals were found in a Wyoming community's aquifer.

Many suspect well casings played a role. Although fracking takes place thousands of feet below aquifers, some fear that fracking itself could have caused it.

Another possible study could involve property values on leased and producing land. The Dominion Post previously reported that other states are seeing challenges in this area, and some banks refuse to offer or think twice about mortgaging land either tied up with mineral leases or in production.

Prices may drive industry

Natural gas prices will play a role in what unfolds during the coming year and in the years following.

The Energy Information Agency (EIA) reported that natural gas spot prices reached a 10-year low in January, and they have continued falling.

The price peaked in July 2008 at $10.79 per mcf (thousand cubic feet).

It bottomed out in September 2009 at $2.98 per mcf, rose again and hovered around the $4 mark through 2011, but began another steady decline in June, and in mid-March was hovering around $2.70 per mcf as the warm winter reduced demand.

Some industry officials have predicted it could fall as low as $1.75 by summer.

In the wake of the low prices, many operators are cutting back production and shifting their attention from dry gas to wet gas.

Dry gas is mostly methane -- used to generate heat and power. It is found in the shale beneath Monongalia and Preston counties. More profitable wet gas contains ethane, propane and butane, which can be separated and used for other purposes.

Ethane, for instance, can be converted to ethylene to make plastics and other products. Pennsylvania recently out-wooed West Virginia and Ohio for the privilege of having Shell build an ethane cracker plant in the Ohio River valley. West Virginia remains optimistic that another firm may still site a plant here.

For West Virginia, the American Chemical Council expects an investment of $3.2 billion would generate 8,000 construction jobs, $15 million in taxes and $363 million in wages.

The operation phase would generate 12,000 permanent jobs, $95 million in taxes and $729 million in wages. The lull won't last forever. The EIA forecasts natural gas prices topping $5 per mcf by 2025 and hitting $6.50 by 2035. In the meantime, fracking is gaining attention around the world. Some countries ban fracking

According to reports, France has banned fracking while Germany and Bulgaria are on hold in response to environmental concerns.

Poland, though, is planning to open the door. The EIA estimates that Poland may sit atop 5.3 tcf, enough to reduce its energy dependence on Russia. ExxonMobil, Chevron and Conoco Phillips have all bought licenses to explore the shale deposits in Poland.

China has an estimated 885 tcf of recoverable shale gas (compared to 482 tcf in the U.S.) and Royal Dutch Shell in March signed the first production-sharing contract to explore, develop and produce shale gas in China, according to reports.

It plans an auction for a second contract in the coming months. U.S. eyes transportation uses

In the U.S., the next big thing in transportation could be vehicles fueled by compressed natural gas (CNG) or liquefied natural gas (LNG).

Chesapeake Appalachia displayed its parent company's CNG chopper, built by reality TV's Orange Country Choppers, at the state Capitol during the winter legislative session. Parent company Chesapeake Energy has signed a deal with General Electric to push the adoption of natural gas vehicles.

GE will supply more than 250 "CNG in a Box" units -- self-contained gas stations -- to build fueling stations across the country. General Motors and Chrysler plan to build natural-gas powered pickup trucks, the EIA said.

Discussions at the Capitol indicated a national transition could take years, and lots of money. There has to be infrastructure -- the fueling stations and the means to get fuel to them. Then vehicles would have to switch over -- probably government and commercial transport vehicles first, then personal cars and trucks.

The EIA reports that there are now 900 CNG fueling stations, with 200 of them in California. There are only 45 LNG stations in the country.

Drilling to W.Va.'s future

Dominion Post, The (Morgantown, WV) - Sunday, April 8, 2012
Author: David Beard, The Dominion Post, Morgantown, W.Va.

April 08--West Virginia is sitting on a fortune. It's called natural gas -- more specifically, shale gas. The world needs energy, and the energy available in shale gas has stirred the world. It's sparked legislation, documentaries, protests, business conferences, websites, academic and government reports, and billions of dollars in spending.

There are shale gas "plays" -- significant, usable formations -- across the country and around the world. West Virginia and a few neighboring states just happen to sit atop two of the largest: The Marcellus and the Utica.

The technology to tap into shale gas is relatively new. Conventional gas extraction involved pumping it from porous rock formations. Shale rock is dense and doesn't allow the free flow of gas. But years of research and experimentation allowed two old technologies -- horizontal drilling and hydraulic fracturing -- to be combined to tap into shale gas.

According to natural gas.org, the first patent for horizontal drilling was issued in 1891 to Robert E. Lee, son of the Civil War general. Hydraulic fracturing -- fracking -- stems back to 1903. It wasn't until about 2005 that the combination of the two began paying off -- first in Texas and Arkansas -- then across the country.

Fracking allows drillers to break apart the dense rock to access the gas. Horizontal drilling allows them to access significant portions of the thin strata from a single bore.

According to horizon taldrilling.org, a single horizontal well can produce three times as much gas as a vertical well. Up to six wells may be drilled on a single 5-acre pad.

The Marcellus shale is about 390 million years old. It's named for the town of Marcellus, N.Y., where it reaches the surface. Near Morgantown, it's 7,000 feet deep. It covers Pennsylvania, New York, most of West Virginia and bits of Ohio and Maryland.

Why is the Marcellus special? According to the U.S. Energy Information Administration (EIA), the Marcellus shale holds 141 trillion cubic feet (tcf) of recoverable gas. The next closest are the Barnett-Woodford ranging north from Texas, with a combined 97 tcf, and the Haynesville in Texas and Louisiana, with 75 tcf, based on 2009 figures.

Marcellus estimates vary widely, from as high as 534 tcf to as low as 84 tcf, and are undergoing constant revision. The U.S. Department of Energy (DOE) -- the EIA is part of the DOE -- just revised its estimate down from 410 tcf to 141 tcf.

To give perspective on what a trillion cubic feet means, 410 tcf would supply the entire U.S. gas consumption needs for about 17 years; 141 tcf would do it for about six years. The deeper Utica shale -- just beginning to be tapped in Ohio -- is even larger.

Promise and problems: It's called the Marcellus boom. West Virginia horizontal well permits mushroomed from 11 in 2007 to an estimated 500 in 2011.

Conversely, conventional vertical well permits have shriveled from 2,400 in 2007 to less than 300 in 2011.

Tom Witt, director of WVU business school's Bureau of Business and Economic Research, has projected that Marcellus gas extraction could produce anywhere from 6,600 to 19,600 new jobs in 2015, depending on growth in industry activity, bringing in $400 million to $890 million in wages, along with millions in associated taxes from the producers, the extracted gas and the employees.

Nationally, according to an ExxonMobil blog article, the shale boom could add 1 million manufacturing jobs by 2025, and $2 trillion in capital investments into the gas industry by 2035.

As the industry bored into the shale boom -- in West Virginia, across the region and the nation -- it also unleashed a host of problems: Water pollution from spills and wastewater retention ponds and poorly made well casings; damaged roads from the truck and equipment traffic; vehicle accidents; well pad neighbors driven from their homes by the noise and disruption and water pollution; and surface owners without mineral rights losing control of portions of their land.

The U.S. Geologic Survey has said fracking causes small earthquakes, almost always too small to be a safety concern.

Fracking wastewater retention ponds are becoming outmoded, as frack water can be recycled, but not indefinitely.

But the solids get put in landfills and the fluids can eventually be injected into deep wells.

The survey says deep well injection can cause earthquakes large enough to be felt and cause damage.

Some industry officials have admitted there was a steep and costly learning curve in learning how to be good neighbors.

West Virginia operators have been and are still being sued in state and federal courts over leased

disputes and property damage questions.

Legislators have been slow to catch up. After three years of debate, West Virginia passed comprehensive drilling and fracking related legislation in December.

Pennsylvania also recently passed legislation.

New York's proposed regulations have completed their public review process. Gov. Andrew Cuomo is expected to issue a decision on whether to allow fracking in the coming weeks.

Maryland's House of Delegates is working on two fracking -related bills.
Memo: --- (c)2012 The Dominion Post (Morgantown, W.Va.)

Natural gas glut means drilling boom must slow
Independent Record (Helena, MT) - Sunday, April 8, 2012
The U.S. natural gas market is bursting at the seams.

So much natural gas is being produced that soon there may be nowhere left to put the country's swelling surplus. After years of explosive growth, natural gas producers are retrenching.

The underground salt caverns, depleted oil fields and aquifers that store natural gas are rapidly filling up after a balmy winter depressed demand for home heating.

The glut has benefited businesses and homeowners that use natural gas. But with natural gas prices at a 10-year low _ and falling _ companies that produce the fuel are becoming victims of their drilling successes. Their stock prices are falling in anticipation of declining profits and scaled-back growth plans.

Some of the nation's biggest natural gas producers, including Chesapeake Energy, ConocoPhillips and Encana Corp., have announced plans to slow down.

"They've gotten way ahead of themselves, and winter got way ahead of them too," says Jen Snyder, head of North American gas for the research firm Wood Mackenzie. "There hasn't been enough demand to use up all the supply being pushed into the market."

So far, efforts to limit production have barely made a dent. Unless the pace of production declines sharply or demand picks up significantly this summer, analysts say the nation's storage facilities could reach their limits by fall.

That would cause the price of natural gas, which has been halved over the past year, to nosedive. Citigroup commodities analyst Anthony Yuen says the price of natural gas _ now $2.08 per 1,000 cubic feet _ could briefly fall below $1.

"There would be no floor," he says.

Since October, the number of drilling rigs exploring for natural gas has fallen by 30 percent to 658, according to the energy services company Baker Hughes. Some of the sharpest drop-offs have been in the Haynesville Shale in Northwestern Louisiana and East Texas and the Fayetteville Shale in Central Arkansas. But natural gas production is still growing, the result of a five-year drilling boom that has peppered the country with wells.

The workers and rigs aren't just being sent home. They are instead being put to work drilling for oil, whose price has averaged more than $100 a barrel for months. The oil rig count in the U.S is at a 25-year high. This activity is adding to the natural gas glut because natural gas is almost always a byproduct of oil drilling.

Analysts say that before long companies could have to start slowing the gas flow from existing wells or even take the rare and expensive step of capping off some wells completely.

"Something is going to have to give," says Maria Sanchez, manager of energy analysis at Bentek Energy, a research firm.

U.S. natural gas production has boomed in recent years as a result of new drilling techniques that allow companies to unlock fuel trapped in shale formations. Last year, the U.S. produced an average of 63 billion cubic feet of natural gas per day, a 24 percent increase from 2006. But over that period consumption has grown half as fast.

The nation's storage facilities could easily handle this extra supply until recently because cold winters pushed up demand for heating and hot summers led to higher demand for air conditioning. Just over half the nation's homes are heated with natural gas, and one-quarter of its electricity is produced by gas-fired power plants.

But this past winter was the fourth warmest in the last 117 years, according to the National Oceanic and Atmospheric Administration. It was the warmest March since 1950.

Between November and March, daily natural gas demand fell 5 percent, on average, from a year earlier, according to Bentek Energy. Yet production grew 8 percent over the same period.

"We haven't ever seen a situation like this before," says Chris McGill, Vice President for Policy Analysis at the American Gas Association, an industry group.

At the end of winter, there is usually about 1.5 trillion cubic feet of gas in storage. Today there is 2.5 trillion cubic feet because utilities withdrew far less than usual this past winter.

There is 4.4 trillion cubic feet of natural gas storage capacity in the U.S. If full, that would be enough fuel to supply the country for about 2 months.

If current production and consumption trends were to continue, Bentek estimates that storage facilities would be full on October 10.

Storage capacity, which has grown by 15 percent over the past decade, cannot be built fast enough to address the rapidly expanding glut. And analysts note there is little financial incentive to build more anyway.

The low price brought on by the glut has increased demand for natural gas among industrial users and utilities.

Makers of chemicals, plastics and fertilizers that use natural gas as a feedstock are expanding. Garbage trucks, buses and delivery vehicles are using more natural gas. Electric power producers are switching from coal to natural gas whenever possible.

This won't add up to enough new demand quickly enough to relieve the pressure on storage facilities this summer.

Scorching temperatures this summer would do the trick, but Mother Nature is not expected to cooperate.

Temperatures this summer are forecast to be about normal, and much cooler than the last two summers, says David Streit, a meteorologist at Commodity Weather Group expects.

Sultry winters, he said, do not usually develop into sultry summers.

Jonathan Fahey can be reached at http://twitter.com/JonathanFahey.
Caption: <p>FILE - In this July 27, 2011, file photo, a pair of workers are behind the top of a pump where the hydraulic fracturing process in the Marcellus Shale layer to release natural gas is underway at a Range Resources site in Claysville, Pa. The U.S. natural gas market is bursting at the seams. So much

natural gas is being produced that soon there may be nowhere left to put the country's swelling surplus. After years of explosive growth, natural gas producers are quickly retrenching. (AP Photo/Keith Srakocic, File) FILE - In this July 27, 2011, file photo, Range Resources site manager Don Robinson stands with the rods that connect to drill into the shale at a well site in Washington, Pa. The company is one of many drilling and " fracking " in the area to release natural gas. The U.S. natural gas market is bursting at the seams. So much natural gas is being produced that soon there may be nowhere left to put the country's swelling surplus. After years of explosive growth, natural gas producers are quickly retrenching. (AP Photo/Keith Srakocic, File) FILE - In this April 22, 2008 file photo, a natural gas well pad sits in front of the Roan Plateau near the Colorado mountain community of Rifle. The U.S. natural gas market is bursting at the seams. So much natural gas is being produced that soon there may be nowhere left to put the country's swelling surplus. After years of explosive growth, natural gas producers are quickly retrenching. (AP Photo/David Zalubowski, File)

University at Buffalo Institute to Analyze Hydraulic Fracturing

Leader, The (Corning, NY) - Sunday, April 8, 2012

BUFFALO - The University at Buffalo has formed a new institute to conduct and disseminate research about hydraulic fracturing .

The Shale Resources and Society Institute will be based in the university's geology department. Director John Martin says the goal is to provide accurate, research-based information that will help guide policymakers.

Hydraulic fracturing involves injecting thousands of gallons of water, chemicals and sand into deep, horizontally drilled wells at high pressure to release natural gas from shale.

The New York Department of Environmental Conservation is working to complete a four-year review of whether shale gas development using the controversial technology can be done safely under strict regulations.

Underground injection wells operating near Oak Hill

Register-Herald, The (Beckley, WV) - Sunday, April 8, 2012

Author: C.V. Moore, Register-Herald Reporter

SUMMERLEE — Fracking fluid from gas wells in Nicholas County is being disposed of at two underground injection wells near Oak Hill.

Danny Webb Construction operates the wells, which have also accepted oil and gas industry waste from across the state for the past 12 years, says owner Danny Webb.

Located on Towne Hollow Road, they are Class 2 wells, meaning any fluids brought to the surface in connection with "conventional oil or natural gas production" may be injected.

There are no limits on the specific chemical make-up of the waste, or the volume injected.

"If it's coming from an oil and gas site, they're good to go," says Jamie Peterson of the West Virginia Department of Environmental Protection's Office of Oil and Gas.

The injection pressure is regulated by the DEP and calculated to be just under the pressure that would fracture the rock.

Webb reports monthly to the DEP on injection rates, volumes, pressures, and hours of activity. One of the wells absorbed 1.4 million barrels of liquid since 2002.

Chad Touchet, completion and production manager for Bluescape Resource Company (BRC), which owns the Nicholas County wells, says the fracking fluid contains sand, a friction reducer made from guar gum, a biocyde to kill bacteria, and a scale inhibitor that contains 0.1 gallon of isopropyl alcohol per 1,000 gallons of water.

Touchet would not comment on the amount of fluid produced from fracking BRC's Nicholas County wells near Richwood because he said it would provide sensitive information to competitors. He says four wells have been fracked and are providing data that will enable the company to decide whether to develop more wells in the area.

The fracking fluid or "flowback" is collected by Webb's company, hauled to Fayette County, and dumped into sediment ponds so that solids can settle. Then it is filtered to remove anything larger than 5 microns and injected underground into the Weir formation, which is 2,703 feet below the earth's surface.

"The formation just takes it," says Peterson. "There is a confining layer [of rock] above that layer that is not permeable so the fluid is not expected to come up above that formation."

He says besides the confining layer, three levels of protection in the well isolate the frack fluid from people and drinking water.

First, a borehole is drilled to a level underneath groundwater and a steel "surface casing" is installed from the surface to the bottom of the borehole to protect the aquifer. Cement seals the space between the casing and the rock.

A smaller borehole is drilled from the bottom of the surface casing to the Weir injection zone. A "long string casing" is installed from the surface to the bottom of the borehole and cement again seals the space to prevent injected fluids from moving along the borehole out of the injection zone.

A tube is installed inside the long string casing with a device called a packer at the bottom that creates an airtight space between the tube and the casing. This space is monitored for changes in pressure, which would indicate a leak.

"We monitor that and if we were ever to get a leak, we shut it down and fix the leak," says Webb.

He says it's "basically impossible" for the waste to enter the water table.

"This is the environmental thing to do," he says. "All you're doing is putting it back where it came from."

Four years ago, citizens began complaining that vapor and odors coming off the site's sediment ponds were making them ill. Peterson says the DEP's Division of Air Quality did not find anything unusual when they tested on site.

Nevertheless, the DEP issued an order requiring twice yearly monitoring on the pond and nearby stream — one of the main tributaries of Wolf Creek — for pH, chloride, iron, and petroleum hydrocarbons. Peterson says there haven't been any problems since then.

The DEP requires a mechanical integrity test every five years to make sure the well isn't leaking and that the waste isn't coming into contact with underground drinking water.

Danny Webb Construction has been cited four times by the DEP for violations at the two wells. The latest was in 2010 for not following underground injection control requirements. All the violations have been abated, according to the DEP's records.

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Technology puts Kan. on cusp of oil boom

Topeka Capital-Journal, The (KS) - Sunday, April 8, 2012
Author: Roxana Hegeman

MEDICINE LODGE — Between the buttes and rolling terrain of the Gypsum Hills in south-central Kansas, a massive drilling rig grinds deep into the earth, seeking to reach the oil-rich Mississippian Lime formation

buried some 5,000 feet deep. Just beyond the rig, Robert Murdock intently watches its progress and waxes confidently about the wealth under his feet.

“It will enrich the area in a way it never has before economically,” the independent oilman says loudly, nearly shouting to be heard above the cacophony of clanging pipes and heavy equipment.

Prospectors like Murdock are punching holes across south-central Kansas, a gold rush-style hunt for oil and gas that players say could yield big returns not just for oil producers but also for the state’s economy. The boom is occurring even as natural gas exploration begins to slow nationally.

In county courthouses across much of Kansas, scores of researchers comb through dusty land records stacked atop folding tables set up in hallways for them, toiling for producers and speculators alike who are scrambling to snap up millions of acres of mineral rights. Leases which just three years ago went for $30 an acre are now fetching $3,000 an acre in drilling hotspots. Awestruck real estate agents watch incredulously as mineral rights fetch higher prices than the land itself.

Drilling has only just begun. Barber and Harper counties are “ground zero” of an oil boom anticipated to spread north across a wide swath of the central Kansas prairie.

“It is going to change things forever in this part of the world,” Murdock said.

Look hard and you can see the first hints of change wafting through once sleepy rural hamlets. It is already difficult to find a hotel room for the night or a rental property to live in. There is talk of possibly setting up “man camps” outside towns to house the anticipated influx of oilfield workers. Restaurants now seem busier than usual. And the local traffic sure feels like it has picked up on those rural roads.

Murdock, president of Hutchinson-based Osage Resources, is among a handful of producers behind an emerging oil boom sparked by modern technologies using horizontal drilling and a technique known as hydraulic fracturing , or “ fracking ,” to coax out oil and gas. Companies have already reaped fortunes off the Mississippian Lime Play in Oklahoma and are now following the rock formation northward into Kansas, where millions of acres of mineral rights have been leased in the past two or three years.

If the Mississippian Lime Play unfolds as expected, the economic boost in Kansas could be enormous. Severance taxes will swell state’s coffers. Landowners will reap royalties. Oilfield workers will find hundreds, if not thousands, of good jobs typically paying $50,000 annually. Main Street business in countless small towns will thrive again.

“This represents an exciting opportunity for growing the Kansas economy while helping to secure greater energy independence for the country,” Kansas Gov. Sam Brownback said. “It means more jobs and revenue here, fewer American dollars sent abroad. Tying this with our growth in wind energy production will make us a leading energy producing state.”

But with horizontal drilling still in its infancy here, all those economic impacts have yet to be fully felt. Locals, who have seen other oil booms come and go, remain wary.

“We are excited about it and we are hopeful,” said Ed Cross, president of the Kansas Independent Oil and Gas Association. “We just want to be cautious looking at the potential. We don’t want to overstate it.”

The newfangled wells are essentially vertical wells with a horizontal bend at the oil-rich lime formation. Fracking , a technique used in Kansas since 1947, pushes water and sand down the hole to open up natural fractures in the rock and increase permeability. That combination of old and new technologies allows producers to extract as much as five to 10 times more oil and gas from a horizontal well than a conventional vertical well.

The potential production from the Mississippian Lime Play — and its impact on domestic energy supplies — remains uncertain. But the use of horizontal drilling and hydraulic fracturing to unlock energy supplies previously unavailable in the United States is now in play in places like Pennsylvania, Wyoming,

Colorado, New Mexico, Texas, Oklahoma and Louisiana.

“We believe this is a game changer,” said Shell spokesman Scott Scheffler. “And we hope the Mississippian will be one piece of that.”

Just ask Kevin White, senior vice president of business development at Oklahoma-based SandRidge Energy Inc. His company has already spent $350 million to acquire nearly 2 million acres of mineral rights in Kansas and Oklahoma — with a majority of those leased acres located across a vast swath of central Kansas.

“Kansas as a percentage of what we are doing will just get bigger and bigger every year because it has got the most undrilled acreage left that we need to go drill,” White said.

This year alone, SandRidge expects to pour $700 million into developing the Mississippian Lime Play in those two states.

The company now has 21 drilling rigs to drill 50 wells in Kansas and 350 wells in Oklahoma this year. Next year the company plans to have 45 rigs drilling 675 wells. To hold on to its leases, the company must drill a well every mile or so. Once that is done — something White says will take five years — SandRidge will go back and drill more wells until they have three wells per square mile.

Within the next dozen years or so, SandRidge alone expects to punch more than 5,000 wells in Kansas, he said.

Other big players in Kansas are Shell Oil Co. and Chesapeake Energy, along with smaller independent Kansas producers.

Shell said it has acquired leases in a seven-county area in southern Kansas and is just now drilling its second exploratory well in Harper County. It plans to run three or four drilling rigs this year. Osage Resources plans to drill 216 horizontal wells to fully develop its Barber County lease.

“In this area, the chances of a dry hole are zero percent,” said Ben Crouch, Osage’s chief operating officer.

Tyson West now leaves his home in Enid, Okla., at 4:15 a.m. and drives two hours to the Medicine Lodge rig, where his Oklahoma-based employer is drilling for Osage Resources. The 27-year-old oilfield worker logs a 12-hour work shift before driving back home. He works seven days straight, seven days off.

“It has kept me at a job,” West said. “It is a real good-paying job.”

Each horizontal well costs about $3 million to develop and pays for itself within 18 months of production, White said. The typical rate of return on investment is 90 percent.

“One of the things making it so attractive today is the high oil prices we are seeing,” White said.

In past decades, Kansas punched some 7,000 conventional vertical wells into the Mississippian Lime.

Meanwhile, the Sierra Club said it is concerned about the impact of fracking on water tables and underground aquifers, while the industry contends the wells are safe. The Mississippian Lime, for example, is 5,000 feet deep, while groundwater typically lies 500 to 1,000 feet deep — with a lot of geological barriers separating the two, Cross said.

Environmentalists want safeguards, such as a requirement that drillers provide a list of toxic chemicals they are using and submit a test of the water table for analysis before drilling to pinpoint the culprit if chemicals are later found in groundwater, said Craig Wolfe, spokesman for the Kansas chapter of the Sierra Club.

EPA: Well water good at town at fracking epicenter

Times Reporter, The (New Philadelphia, OH) - Saturday, April 7, 2012

DIMOCK, PA. Testing at 20 more water wells in a northeastern Pennsylvania community at the center of a debate over the safety of natural gas drilling in the Marcellus Shale shows no dangerous levels of contamination, according to a report issued Friday by the Environmental Protection Agency.

The EPA had already tested 11 wells in Dimock, showing the presence of sodium, methane, chromium or bacteria in six of the wells before the results of the latest round of testing.

Three of the newly-tested wells showed methane while one showed barium well above the EPA's maximum level, but a treatment system installed in the well is removing the substance, an EPA spokesman said.

Featured in the documentary "Gasland," the Susquehanna County village of Dimock has been at the center of a fierce debate over drilling, in particular the process of hydraulic fracturing , or fracking . The process involves injecting a mixture of water and chemicals deep underground to free trapped natural gas so it can be brought to the surface.

State environmental regulators previously determined that Houston-based Cabot Oil & Gas Corp. contaminated the aquifer underneath homes along Carter Road in Dimock with explosive levels of methane gas, although they later determined the company had met its obligation to provide safe drinking water to residents.

The EPA still is providing drinking water to three homes where prior tests showed contamination.

Hydraulic fracturing rules bring controversy to lonesome prairie

News-Times, The (Danbury, CT) - Saturday, April 7, 2012

Author: Jennifer A. Dlouhy

McKENZIE COUNTY, N.D. -- Amid industry fears that looming regulations threaten technology that has revolutionized oil and gas production, Interior Secretary Ken Salazar has a quick comeback: The change will be better for both industry and the environment.

Both sides are referring to pending Bureau of Land Management rules related to hydraulic fracturing on federal lands. During a visit to the booming Bakken formation in North Dakota last week, Salazar said the rule will include "common-sense" mandates that could bolster the industry's image by helping soothe fears about fracturing.

"Our hope is that by approaching hydraulic fracturing in a way that creates confidence among the American public, it won't become the Achilles heel of the oil and gas industry," Salazar said. "We can do oil and gas development and, at the same time, make sure that we're taking measures to protect our environment and assure the American public."

About a third of the United States' natural gas production now comes from the hydraulic fracturing process, which involves blasting water, sand and chemicals deep underground to crack rock formations and unlock the hydrocarbons trapped inside.

Energy analysts say fracturing -- when combined with horizontal drilling techniques -- is essential to recovering a 100-year supply of natural gas from shale formations nationwide, including the Marcellus in New York and Pennsylvania and the Eagle Ford in Texas. The process also is being used to extract crude from the Bakken formation and is credited with helping drive domestic oil and gas production to an eight-year high in 2011.

But environmentalists warn that fracturing chemicals can contaminate drinking water supplies and that natural gas can pollute groundwater if it leaches out of poorly designed and cemented wells. Those fears have stoked nationwide calls for a clamp down on fracturing, including a ban on new drilling in New York.

"What has made much of what we are seeing today possible has been the new technology around horizontal drilling as well as hydraulic fracturing ," Salazar said. But, he said, that could be jeopardized "unless we are able to move forward with a program that assures the American public that it is being done safely and responsibly."

Industry representatives acknowledge that companies initially were slow to respond to concerns about fracturing but have since stepped up with a website for disclosing details about chemicals they use. At the same time, states have imposed regulations on hydraulically fractured wells.

"The secretary's Achilles' heel analogy is a little dated at this point," said Dan Naatz, a vice president with the Independent Petroleum Association of America. "Industry has moved forward. The states are moving forward. Things have progressed, and in many ways, the secretary is trying to address a problem that doesn't exist anymore."

Oil and gas industry representatives say a new drilling rule -- even if it is just for wells on federal lands -- will further discourage exploration in those areas.

"States are effectively requiring disclosure without discouraging investment," said Reid Porter, an American Petroleum Institute spokesman. "There is absolutely no need for the federal government to add bureaucratic layers where disclosure is already occurring."

During his two-day energy tour of North Dakota last week, Salazar visited temporary housing for oilfield workers who have swarmed the state and checked out a rig drilling a well for The Woodlands, Texas-based Newfield Exploration Co.

The Newfield project is the type of work that would be affected by the Interior Department's new rule. Although Newfield is drilling on private land, the company is set to drain a subsurface field that includes federal minerals.

Using horizontal drilling techniques, Newfield workers are steering drilling pipe to a location two miles down and two miles away, keeping inside a target zone that is just 10 feet thick. After the well is drilled, it will be stimulated by hydraulic fracturing .

The whole process -- drilling and completion -- will cost roughly $10 million to $11 million, with the promise of initially delivering 3,000 barrels per day of oil, Newfield officials said.

The Interior Department's Bureau of Land Management is putting the final touches on its proposed rule, which would set new standards for fractured wells on roughly 700 million acres of public lands.

The measure, which could be formally proposed later this month, would require companies to publicly disclose chemicals that make up the fluids they intend to pump underground, though there would be an exemption for trade secrets.

Federal officials recently signaled they are considering letting companies disclose the data through the industry-backed FracFocus website, rather than directly to federal regulators before beginning operations. But an initial draft of the government's proposal called for companies to submit that information directly to regulators well before commencing work.

The broad outlines of the draft rule and the formal proposal are expected to be the same, though some provisions may change. According to the draft, companies would also be forced to win the government's approval before fracturing wells on federal lands -- something not required for routine work now. They also would have to give the government details on how they will supply water to sites and how much they expect to collect back from the ground.

The measure also is set to impose new mandates for the design and monitoring of wells, including possible requirements for mechanical integrity tests to confirm the well casing is strong enough to prevent leaks.

Oil and gas industry leaders warn that the requirements could duplicate -- and even contradict -- state regulations. fracturing. Several states, including Texas, already have chemical disclosure requirements on the books.

Industry lobbyists also insist a one-size-fits-all set of well mandates won't work for exploration that varies from formation to formation.

The risk is that drilling on federal lands will take longer and cost more as the regulatory hurdles to that work grow higher, Naatz said.

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Oil, gas production tied to quakes
Republican-American (Waterbury, CT) - Saturday, April 7, 2012
NEW YORK - Oil and gas production may explain a sharp increase in small earthquakes in the nation's midsection, a new study from the U.S. Geological Survey suggests.

The rate has jumped six-fold from the late 20th century through last year, the team reports, and the changes are "almost certainly man-made."

Outside experts were split in their opinions about the report, which is not yet published but is due to be presented at a meeting later this month.

The study said a relatively mild increase starting in 2001 comes from increased quake activity in a methane production area along the state line between Colorado and New Mexico. The increase began about the time that methane production began there, so there's a "clear possibility" of a link, says lead author William Ellsworth of the USGS.

The increase over the nation's midsection has gotten steeper since 2009, due to more quakes in a variety of oil and gas production areas, including some in Arkansas and Oklahoma, the researchers say.

It's not clear how the earthquake rates might be related to oil and gas production, the study authors said. They note that others have linked earthquakes to injecting huge amounts of leftover wastewater deep into the earth.

There has been concern about potential earthquakes from a smaller-scale injection of fluids during a process known as hydraulic fracturing , or fracking , which is used to recover gas. But Ellsworth said Friday he is confident that fracking is not responsible for the earthquake trends his study found, based on prior studies.

The study covers a swath of the United States that lies roughly west of Ohio and east of Utah. It counted earthquakes of magnitude 3 and above.

Magnitude 3 quakes are mild, and may be felt by only a few people in the upper floors of buildings, or may cause parked cars to rock slightly. The biggest counted in the study was a magnitude-5.6 quake that hit Oklahoma last Nov. 5, damaging dozens of homes. Experts said it was too strong to be linked to oil and gas production.

The researchers reported that from 1970 to 2000, the region they studied averaged about 21 quakes a year. That rose to about 29 a year for 2001 through 2008, they wrote, and the three following years produced totals of 50, 87 and 134, respectively.

The study results make sense and are likely due to man-made stress in the ground, said Rowena Lohman, a Cornell University geophysicist.

"The key thing to remember is magnitude 3s are really small," Lohman said. "We've seen this sort of

behavior in the western United States for a long time."

Usually, it's with geothermal energy, dams or prospecting. With magnitude 4 quakes, a person standing on top of them would at most feel like a sharp jolt, but mostly don't last long enough to be a problem for buildings, she said.

The idea is to understand how the man-made activity triggers quakes, she said. One possibility is that the injected fluids change the friction and stickiness of minerals on fault lines. Another concept is that they change the below-surface pressure because the fluid is trapped and builds, and then "sets off something that's about ready to go anyway," Lohman said.

But another expert was not convinced of a link to oil and gas operations.

Austin Holland, the Oklahoma state seismologist, said the new work presents an "interesting hypothesis" but that the increase in earthquake rates could simply be the result of natural processes.

Holland said clusters of quakes can occur naturally, and that scientists do not yet fully understand the natural cycles of seismic activity in the central United States. Comprehensive earthquake records for the region go back only a few decades, he said, while natural cycles stretch for tens of thousands of years. So too little is known to rule out natural processes for causing the increase, he said.

Online: Study abstract: http://bit.ly/HmqAxx
Science writer Seth Borenstein in Washington contributed to this report.

Seismic, well-water testing under way
Sanford Herald, The (NC) - Saturday, April 7, 2012
Author: BILLY BALL Sanford Herald

SANFORD — As U.S. Geological Survey worker Doug Smith extends his reel of measuring tape into the depths of this Lee County well, John is all ears.

John, a southern Lee County resident, is eager to discover what he may about the hand-dug well that his wife's great-grandfather created 200 years ago on this family's large tract of land.

John's well is one of many the USGS and Duke University are probing as they begin efforts in earnest to gather baseline groundwater data prior to any hydraulic fracturing , better known as " fracking ," in Lee County's presumably gas-rich countryside.

Workers planned to perform seismic and well-water testing throughout the day Friday, starting out in the morning hours on John's land.

The verdict? The well is roughly 50 feet deep in total, Smith says, with about 24 feet of water down in the depths. John is admittedly surprised by how deep the well goes.

John is not actually his name, but, upon request,The Herald is excluding the real name of these Lee County landowners who were promised anonymity by the survey. Officials say they are being cautious with a vital pool of data that leaders may use to assess the impacts of fracking on the aquifer if the gas drilling method is legalized by North Carolina lawmakers.

Fracking involves pumping pressurized mixtures underground to break up shale reserves and access gas trapped within the rocky deposits. Proponents say it's a clean and safe economic second wind for Lee County; critics point to lingering questions about the longterm health and environmental impacts.

The USGS hopes to test for the presence of methane, chlorine and any compounds of note for comparison purposes if the drilling goes forward in North Carolina.

"Our concern is that we provide or help our residents in this county to get enough information so they can

be informed consumers making great decisions for them and their families," said Susan Condlin, director of Lee County Cooperative Extension, whose agriculture-advocating organization has been at the forefront in recent months of planning and educating on the fracking prospects.

Condlin said the seismic monitoring is expected to continue for at least the next two years as officials gauge impacts of the drilling.

Smith said geological workers are trying to gather depth records on the county's hundreds of wells inside a limited study area. Some of the more modern wells are recorded in county offices, but others — like John's old, do-it-yourself well — are something of a mystery.

John said he hopes to one day use this well for its water, but it's primarily a contingency supply for his family at this point.

Either way, he's not too concerned about what fracking will do to his water and the dozens of timber-yielding acres he owns, arguing that he believes the drilling is actually "very safe."

"Everything involves risk, but I think it's a manageable and reasonable risk," he said.

The country wants to someday rely on its energy supply to sever its ever-volatile cord to the oil rich Middle Eastern nations, and John describes the natural gas as a bridge to get there.

What worries him more, he says, is the smog drifting in western North Carolina from coal-burning facilities across the Tennessee border.

"There's a perceived threat to the groundwater," he says. "There's a real threat to the air from burning coal."

And what of the economic impacts? "It's going to be huge," John says, anticipating scores of ready-to-go jobs, soaring rent and leasing dollars for landowners.

A second well on John's property is much smaller, extending 29 feet below the ground and offering 7 feet of water, according to Smith.

The underground shale targeted by drillers is hundreds of feet below the surface, growing more shallow toward the river basin.

For more information on the study, contact Melinda Chapman at the USGS at (919) 571-4047 or via email at mjchap@usgs.gov.

NORTH DAKOTA STATE UNIVERSITY LAB TO ANALYZE CLAY SAMPLES FROM NORTH DAKOTA OILPATCH COUNTIES

US Fed News (USA) - Saturday, April 7, 2012
FARGO, N.D., April 3 -- North Dakota State University issued the following news release:

Scientists in a lab at NDSU's Center for Nanoscale Science and Engineering are analyzing materials that could eventually play a role in North Dakota oil exploration.

As part of a research agreement with the North Dakota Geological Survey in Bismarck, N.D., the Materials Characterization and Analysis Laboratory at the Center for Nanoscale Science and Engineering is analyzing 198 clay samples to determine their composition and suitability for use as a component in hydraulic fracturing . The clays show early promise for potential use as a key material known as ceramic proppant, used in the fracking process to help keep fractures open. The fracking process is used to extract oil and natural gas deep within the ground in places such as the Williston Basin.

The materials lab at the center provides scientific expertise and a unique set of analytical capabilities and instruments not typically found in other settings. "The lab has excellent analytical equipment, a very good

reputation for generating accurate results in a timely manner, and the lab personnel are easy to work with," said Ed Murphy, state geologist for North Dakota.

Energy industry publications have referenced shortages of proppant. Results from the scientific study of the samples could shed light on whether North Dakota could eventually supply some of the proppant materials needed for oil exploration.

The clay, known as kaolinite, is found in some hillsides in western North Dakota. Researchers at NDSU's Center for Nanoscale Science and Engineering will use X-ray fluorescence to determine which elements and how much of those elements are contained in samples from the various locations. Out of the 198 samples, the scientists also will analyze 36 clay samples using X-ray diffraction to determine the amount of kaolinite, illite, chlorite and other substances that may be in the samples. The testing is expected to take approximately five months. The samples being tested at the center come from Adams, Bowman, Dunn, Golden Valley, Grant, Hettinger, Mercer, Morton, Slope and Stark Counties.

NDSU's Center for Nanoscale Science and Engineering researchers and technicians working on the project include: Bret Mayo, Cindy Buttke, Eric Jarabek, Jim Bahr and Margaret Piranian.

"The labs and scientific staff at NDSU CNSE have unique capabilities. We frequently partner with agencies and industry on projects," said Philip Boudjouk, vice president for research at NDSU. "We're glad to be able to provide such expertise that may be of future assistance to the state's energy enterprise."

For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

A Big Fracking Deal - This week's top MuckReads from ProPublica . MuckReads: The Best Reporting About Fracking
Slate (USA) - Friday, April 6, 2012
Author: Cora Currier

On Monday, ProPublica is hosting a live discussion at New York City's Tenement Museum on "The Perils and Promise" of using hydraulic fracturing to drill for natural gas. To get the conversation going, here is a collection of can't-miss watchdog journalism on fracking .

Halliburton's Interests Assisted by the White House, Los Angeles Times, October 2004

Despite environmental concerns raised by staff members at the EPA George W. Bush and Dick Cheney firmly supported hydraulic fracturing —a technique that just happened to be developed by Halliburton, a company Cheney headed from 1995 to 2000.

Buried Secrets: Is Natural Gas Drilling Endangering U.S. Water Supplies?, ProPublica, November 2008

Though a 2004 EPA study found fracking did not pose a risk to drinking water, contamination was far more prevalent than indicated in the report. A case in rural Wyoming was the first recognized by a federal agency. But more than 1,000 other cases tied to drilling and francking have been documented by courts and state and local governments, including one that blew up a house.

State Oil and Gas Regulators Are Spread Too Thin To Do Their Jobs, ProPublica, December 2009

As fracking operations ballooned in 22 states, regulators struggled to keep up. Questions about resources required to regulate fracking rarely entered the debate, but it was hard to ignore in a place like Texas, where the number of new wells drilled each year jumped 75 percent from 2003 to 2009 while state regulatory staff increased just 5 percent.

Game Changer, This American Life, July 2011

One Pennsylvania professor discovers that fracking is an economic boon; another, that the technique is an environmental nightmare. Politics ensue, and the resulting story provides poignant insight into what happens when a game-changer hits a state, “like natural gas hit Pennsylvania.”

Fracking at Drinking Water Source for 80,000 Pennsylvanians Raises Alarms, Inside Climate News, July 2011

When one Pennsylvania water utility leased its watershed to gas drillers without much public input, residents, even those not totally opposed to fracking , became concerned. Though this watershed was the only one to have leased its land, many others were being courted.

A Tainted Water Well, and Concern There May Be More, New York Times, August 2011

For decades, oil and gas industry executives claimed that fracking never contaminated underground drinking water. Except one EPA report documented just such a case—and it was published in 1987. The same report suggested that more cases may exist, but sealed settlements between energy companies and landowners prevented researchers from investigating further

Hunt for Gas Hits Fragile Soil, and South Africans Fear Risks, New York Times, December 2011More than 30 countries are now considering fracking for natural gas or oil, and the U.S. has “taken a lead role in supporting the dissemination of the technique abroad.” In some countries, especially in developing nations, it’s often been adopted with a “drill-first, figure-out-regulations-later attitude” that could lead to problems.

How the Sierra Club Took Millions from the Natural Gas Industry and Why They Stopped, Time, February 2012

Some environmental groups initially promoted natural gas as a “bridge fuel,” because of its smaller carbon footprint. But the Sierra Club’s cozy relationship with the industry blew up on them after concerns about pollution from fracking moved to the forefront. This article traces big environmental groups’ attempts to change the energy industry “from within” — and the tension that led to with grassroots supporters.

For Pennsylvania’s Doctors, a Gag Order on Fracking Chemicals, Mother Jones, March 2012

A new law lets Pennsylvania doctors can request information about fracking chemicals. They just can't share it with anyone—including their patients.

(ProPublica reporter Abrahm Lustgarten helped curate this list.)
Caption: Spencer Platt/Getty Images. Opponents of hydraulic fracturing in New York rally in January

Hydraulic Fracturing Topic of Free USGS Lecture Wednesday

Targeted News Service (USA) - Friday, April 6, 2012
RESTON, Va., April 2 -- The U.S. Department of the Interior's U.S. Geological Survey issued the following news release:

Hydraulic fracturing -- a technology used to extract unconventional oil and natural gas from previously impermeable, compact rock -- is the topic of a free public lecture Wednesday, April 4 at 7 p.m. at the U.S. Geological Survey National Center in Reston, Va. A panel of USGS experts will discuss the opportunities and impacts associated with hydraulic fracturing .

The USGS public lectures are held monthly in Reston, Virginia. For more information and directions visit the Public Lecture Series website (http://www.usgs.gov/public_lecture_series/).

Unconventional gas now accounts for more than half of the natural gas produced in the United States and unconventional oil development is fueling boomtowns in some areas of the country. The process of hydraulic fracturing involves injecting wells with water, sand, and chemicals at very high pressure to extract gas and oil.

Doug Duncan, associate coordinator for the USGS Energy Resources Program, will address the increasing role that unconventional oil and gas resources play in the nation's petroleum endowment. USGS hydrologist Dennis Risser will discuss some of the major water availability and quality challenges associated with natural gas development, with a focus on the Marcellus Shale in Pennsylvania. Bill Leith, associate coordinator the USGS Hazards Program, will conclude the lecture by discussing the potential connection between disposal of waste fluids from hydraulic fracturing and earthquakes.

The USGS is the authoritative, unbiased source for assessments of the world's oil and gas reserves.

The lecture is in a federal facility and a photo ID is required for entry. Those unable to attend can follow the lecture series on Twitter @USGSLive.

These evening events are free to the public and intended to familiarize a general audience with science issues that are meaningful to their daily lives. USGS speakers are selected for their ability and enthusiasm to share their expertise with an audience that may be unfamiliar with the topic.

The series provides the public an opportunity to interact with USGS scientists and ask questions about recent developments in Natural Hazards; Water; Energy Minerals and Environmental Health; Climate and Land Use Change; Ecosystems; and Core Science Systems. Ultimately, the goal is to create a better understanding of the importance and value of USGS science in action.

TNS 23nq 120407-3833184 61NaushinaQamar
Memo: Melanie Gade, 703/648-4353, mgade@usgs.gov

Audit: Gas lines tied to fracking lack oversight
Associated Press Archive - Friday, March 23, 2012
Author: GARANCE BURKE, Associated Press

Government auditors say federal officials know nothing about thousands of miles of pipelines that carry natural gas released through the drilling method known as fracking , and need to step up oversight to make sure they are running safely.

Amid the gas-drilling boom, private companies have put in hundreds of small gathering pipelines in recent years to collect new fuel supplies released through the high-pressure drilling technique.

Nationwide, about 240,000 miles of gathering pipelines ferry the gas and oil to processing facilities and larger pipelines in the major energy-producing states. Many of these pipelines course through densely populated areas, including neighborhoods in Fort Worth, Texas.

The Government Accountability Office said in its report issued Thursday that most of those miles are not regulated by the U.S. Pipeline and Hazardous Materials Safety Administration, which means they are not regularly inspected for leaks or corrosion.

In some states, officials don't know where the lines are.

Emily Krafjack, who lives in the gas-rich Marcellus Shale formation in Pennsylvania, said many local residents have no idea that the pipelines near their homes are not overseen by federal regulators. Gathering lines that run in the rural northeastern corner of the state receive no federal oversight if there are fewer than 10 homes within 220 yards of the pipeline.

"Who would ever think that they could run something like this next to your home and it wouldn't have any regulations attached to it?," said Krafjack, a former community liaison for Wyoming County, Pa., on gas issues.

Nationwide, there are about 200,000 miles of gas gathering lines and up to 40,000 miles of hazardous liquid gathering lines in rural and urban areas alike, ranging in diameter from about 2 to 12 inches. But

only about 24,000 of those miles are regulated, according to the report.

The industry is not required to report pipeline-related fatality, injury or property damage information about the unregulated lines. PHMSA only collects information about accidents on the small subset of gathering lines that the agency regulates, but that data was not immediately available Thursday.

The pipeline agency is considering collecting more data on the unregulated gas gathering lines, but the plans are still preliminary and have met with some resistance from the natural gas industry. Agency officials are reviewing more than 100 public comments received about their proposal for gas lines, and also plan to propose a rule that will cover hazardous liquid gathering pipelines by the fall, said Jeannie Layson, a spokeswoman for the Pipeline and Hazardous Materials Safety Administration.

PHMSA delegates some enforcement of its rules to state-level pipeline safety authorities, who the Government Accountability Office surveyed to understand the array of risks associated with gathering lines.

Those state-level agencies told the auditors that construction quality, maintenance practices, unknown locations, and limited or no information on current pipeline integrity all posed safety risks for federally unregulated gathering pipelines.

The expansion of hydraulic fracturing , which involves shattering rock thousands of feet underground with a combination of water, sand and chemicals, promises staggering yields, and drilling also comes with promises of job creation and economic opportunities.

But in Fort Worth, where dozens of new gathering lines have been laid in recent years to capture supplies from hundreds of new wells, some residents say there aren't enough protections from leaks and ruptures due to corrosion.

"It's ridiculous," said Jerry Lobdill, a retired chemical engineer who lives in a Fort Worth neighborhood near several new gas wells and has several lines running near his home. "The gathering lines are unregulated, the city doesn't know where they are, and they're buried so you can't see them."

The recent surge in drilling also has led California lawmakers to write new laws to increase oversight of the industry.

Assemblyman Bill Wieckowski, D-Fremont, is sponsoring a bill now pending before a state Senate committee that would require gas and oil producers to disclose what chemicals they are using when they engage in hydraulic fracturing .

"If we're on this cusp of a boom then maybe we at the very least need to know where these lines are," Wieckowski said.

Follow Garance Burke on Twitter at http://twitter.com/garanceburke.

FRACTURING DISCLOSURE - Exxon Mobil is told it must allow a vote

Houston Chronicle (TX) - Friday, April 6, 2012
Author: Emily Pickrell

The Securities and Exchange Commission has turned down a request from Exxon Mobil Corp. to omit a resolution on hydraulic fracturing disclosures from its proxy statement, opening the door for a vote on the proposal at the company's annual shareholder meeting May 30.

"We are unable to concur in your view that Exxon Mobil may exclude the proposal," the SEC wrote in its decision.

An investor activist group had asked Exxon Mobil shareholders to require the company to provide more information on how it manages risks related to hydraulic fracturing , a technology that is helping drive a

boom in production of oil and gas locked in tight rock formations.

Shareholder value

Critics says fracturing can threaten water supplies and cause localized earthquakes, and the resolution asks Exxon Mobil to report on how regulatory and community reaction might affect shareholder value.

Exxon Mobil asked the SEC for permission to exclude the resolution, saying the requested information already is available publicly - including on FracFocus.com, a national online database of chemicals companies use in hydraulic fracturing .

"Informing Exxon Mobil shareholders of risks related to hydraulic fracturing does not require inundating them with vast amounts of highly detailed local information," the Irving-based oil giant wrote in a March 5 letter to the SEC.

As You Sow, a shareholder advocacy group, submitted the resolution on behalf of the Park Foundation, an Exxon Mobil stockholder. The group maintains its proposal calls for the company to release much more information than it has.

'Nominal information'

"Their financial statements have the most nominal information on risks related to hydraulic fracturing ," said Michael Passoff, senior strategist at As You Sow. "There is one sentence on the regulatory risks and changes. It does not tell you anything."

He said As You Sow filed similar proposals with nine other oil and gas companies, and that Exxon Mobil was the only one to file a challenge with the SEC - although the group withdrew proposals after negotiations with some of the other companies.

Exxon Mobil spokesman Alan Jeffers said only 28 percent of shareholders voted to approve a similar resolution last year.

"We feel we have substantially implemented what they are requesting," Jeffers said.

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PA. HIGH COURT TAKES APPEAL ON MARCELLUS SHALE RIGHTS

Pittsburgh Post-Gazette (PA) - Friday, April 6, 2012
Author: Mike Lee, Bloomberg News

PHILADELPHIA -- The Pennsylvania Supreme Court's decision to hear an appeal of a dispute over Marcellus Shale natural gas rights may clarify the status of thousands of drilling leases in the state.

Two Pennsylvania landowners, John and Mary Butler, are challenging an intermediate appeals court ruling that called for scientific opinion on whether Marcellus Shale gas, which is released by the process known as hydraulic fracturing , should be considered a mineral under an 1882 decision of the state's high court. In the trial court, the landowners won their claim to the natural gas rights.

"It is essential to have established law and expectations with regard to oil and gas conveyancing," the Marcellus Shale Coalition, which represents the gas industry, said Wednesday in a statement. "As there already is established and long-standing Pennsylvania legal precedent on this subject, the timely reaffirming of that precedent will provide important and necessary certainty."

Since 2009, Pennsylvania's high court has taken at least four significant cases that deal with the state's portion of the Marcellus Shale, a dense rock formation that stretches from New York to West Virginia. The Butler case could mark the first time in more than five decades that the court will address a 130-year-old rule governing land transfers, which serves as a foundation for many Marcellus Shale leases.

Oral argument before the court is probably months away, Greg Krock, an attorney for the Butlers, said in a phone interview. The court denied a request from the Pennsylvania Independent Oil & Gas Association to file papers in support of the appeal. Written arguments in the case are due by May 15, according to court records.

"The case introduces a tremendous amount of uncertainty into mineral rights in Pennsylvania," said Michael Joy, an attorney with Reed Smith in Pittsburgh who also holds a doctorate in geology. "A whole host of companies had to re-evaluate their lease portfolios, to try and understand what they had," he said.

The case arose from a dispute between the Butlers and the heirs of an 1881 deed governing 244 acres in Susquehanna County.

The deed, drawn by one Charles Powers, transferred to his heirs the oil and mineral rights for the land, which can be separated from surface rights under Pennsylvania law.

At issue is whether Pennsylvania's long-standing "Dunham Rule" applies to natural gas from the Marcellus Shale. The rule, stemming from a case before the state Supreme Court in 1882, provides that when a deed transfers ownership in minerals, it must refer specifically to oil and gas to transfer rights to those products, said David Fine, a Harrisburg-based attorney at K&L Gates. In this instance, the Powers deed mentions petroleum oils and minerals. There is no mention of gas, according to court documents.

The Butlers sued in 2010 to claim the gas under their land. They argued that Powers' failure to include the word "gas" in separating subsurface rights on his former property gives them the right to tap it.

The Powers heirs, in an argument with wider implications for gas leases in the state, claimed that since Marcellus gas is trapped in rock and doesn't flow freely to the surface, as gas did from oil wells in the 1880s, it should be considered a mineral and part of the rights explicitly transferred in the deed, according to court records. They own the gas trapped in the shale the same way they would own the gas trapped in a coal seam, they said.

Powers' heirs are seeking rights to half the gas.

After the trial judge ruled for the Butlers, an appeals court judge decided in September that state law isn't clear with respect to shale gas and ordered the trial court to solicit expert opinions on the issue.

Laurence Kelly, an attorney for the Powers heirs, declined to comment on the Supreme Court's decision to take the case.

The Butler case won't affect mineral leasing in other states because the rules on ownership are unique to each state, Mr. Joy said in an interview.

Pennsylvania has attracted some of the biggest oil-and-gas operators in the country, including Chesapeake Energy Corp. and Range Resources Corp. Chesapeake has leased 1.78 million acres in the Marcellus Shale, an area larger than Delaware, according to data compiled by Bloomberg.

"Given the way the court has phrased the issue in the order granting review, it's not even entirely clear that it will squarely address the rule," Mr. Fine said, referring to the state high court.

"If the Supreme Court were to revisit the Dunham Rule and modify it in any meaningful way, it would have the potential to cause significant chaos in the oil and gas industry in Pennsylvania," Mr. Fine said. "People in Pennsylvania have understood that this is the way you wrote deeds since the 1880s."

The Marcellus Shale may hold as much as 141 trillion cubic feet of gas, according to data compiled by Bloomberg. In the past decade, energy companies have learned how to recover oil and gas from the Marcellus Shale and similar fields using hydraulic fracturing , or fracking , a process that breaks up the rock using water, sand and chemicals.

Drilling in Pennsylvania's portion of the Marcellus Shale formation could mean $20 billion to the state's economy by 2020, from $13 billion last year, according to an industry-funded study published by researchers from Penn State University.

SHALE RESOURCES AND SOCIETY INSTITUTE TO ANALYZE SHALE 'S POTENTIAL AS AN ENERGY RESOURCE

US Fed News (USA) - Friday, April 6, 2012
BUFFALO, N.Y., April 5 -- The University at Buffalo issued the following press release:

A new Shale Resources and Society Institute based in the University at Buffalo College of Arts and Sciences, Department of Geology, will serve as a resource to help the public, policymakers and other stakeholders understand shale's potential as an energy resource.

The goal of the institute is to provide accurate, research-based information on the development of shale and other unconventional resources, said John P. Martin, the institute's director.

Specifically, the institute will conduct and disseminate peer-reviewed research that can help guide policymakers on issues relating to hydraulic fracturing and the development of energy resources. The institute will also educate students and provide the public with accurate information.

The institute's work will draw on the expertise and perspectives of external research partners and UB faculty members in disciplines ranging from engineering to law and the social sciences. Activities will focus on four areas relating to shale development: fractures, fluids and migration; groundwater and surface environmental impacts; societal impacts; and policy and regulation.

"We're really trying to provide fact-based, objective information," Martin said. "We're guided by science."

"Many people in New York State have a strong opinion on this issue," said Robert Jacobi, the center's co-director and a longtime UB professor of geology. "We want to become a valuable community resource where anyone can come and read about current research, outreach and education, and have a feeling that they can trust these data."

Martin said the institute plans to seek funding from sources including industry and individuals, as well as agencies that support scientific research relating to energy. Future plans include establishing a management committee for the institute that includes the voices of environmental organizations and other stakeholders.

In addition to serving as director of the Shale Resources and Society Institute, Martin is the founder and principal consultant of JPMartin Energy Strategy LLC, which provides strategic planning, resource evaluation and other services to the energy industry, academic institutions and governments.

Prior to forming the consultancy in 2011, Martin spent 17 years working on energy research and policy issues at the New York State Energy Research and Development Authority (NYSERDA) and developed a series of projects targeting oil and gas resources, renewable energy development and environmental mitigation. He holds a PhD in Urban and Environmental Studies from Rensselaer Polytechnic Institute.

Jacobi, a field and lab geoscientist, has extensive experience in academia and industry. A member of UB's faculty since 1980, he has over 30 years of experience teaching the structure, tectonics and evolution of North America, marine geology and geophysics, sedimentology and stratigraphy.

His present research focus includes identifying, understanding and predicting the trends of faults, fractures and folds in black shales. In addition to his work at UB, Jacobi is senior geology advisor for EQT Production, a Pittsburgh-based energy company. He recently consulted for the New York State Department of Environmental Conservation concerning hydraulic fracturing , with respect to faults and potential seismic activity. He holds a PhD in geology from Columbia University.

For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com
Memo: John DellaContrada, 716/645-4601, dellacon@buffalo.edu

Range Resources traffic has left Springdale in the dust

Valley News Dispatch (New Kensington, PA) - Friday, April 6, 2012
Author: Michael Aubele

Range Resources will donate $2,500 to the Springdale Volunteer Fire Department in exchange for firefighters' help in controlling a dust problem created by truck traffic.

As many as 400 water trucks were traveling each day on Pittsburgh and Butler streets in recent weeks to support the drilling of a Marcellus shale natural gas well in Frazer. The trucks have been drawing water from the Allegheny River to use for fracking at the Yutes well near the Pittsburgh Mills mall.

Matt Pitzarella, a Range Resources spokesman, said the bulk of the truck traffic ended late Wednesday. There could be trucks drawing water from the river in the future, although the operation won't be nearly as extensive, he said.

Councilman John Molnar said dozens of residents have called borough officials to complain about dust and the truck traffic.

Molnar said the trucks drew water from an access point near R.I. Lampus Co. -- an area where a silicon company called Satellite Alloy operated more than two decades ago.

When it operated, Satellite Alloy's plant produced metallic dust "that's very abrasive to the lungs," Molnar said. Some of that dust still remains settled near the river along Butler Street.

Molnar said the trucks tracked the dust along Butler and Pittsburgh streets.

To prevent the dust from creating a public health risk, firefighters were to spend Thursday night and part of Saturday hosing off Butler Street from its intersection with Pittsburgh Street to the river, Molnar said. He said the dust is heaviest in that area.

A borough fire official couldn't be reached for comment. It wasn't immediately clear how the fire department would use the donation.

Group asks for fracking ban - ENVIRONMENT THE FIGHT OVER FRACKING

Fairport-East Rochester Post (NY) - Thursday, April 5, 2012
Author: BETHANY YOUNG; byoung@messengerpostmedia.com @MPN– BYoung

Citing potential water pollution and other harmful risks, members of the Citizens Alliance for a Pristine Perinton (CAPP) presented their findings on hydrofracking to the Perinton Town Board last week.

At the conclusion of the group's presentation on Wednesday, March 28, they asked the board to enact a prohibition banning the practice within town limits, or at the very least, pass a moratorium on fracking .

While presenters admitted that Perinton is not a likely area to be targeted for gas drilling, if it is legalized in New York, its residents could be harmed if liquid flowback, or "brine," containing radioactive material is leaked into the water supply from a nearby region.

This would pose a risk if drillers capitalize on the rich natural gases in the Utica Shale, located beneath the Marcellus Shale, which is located in Monroe County and much of Upstate New York.

Aside from possible water and air pollution, the threat of traffic and roadway issues was also addressed.

CAPP member Martha Sullivan showed a video clip that described the negative impact of numerous

heavy construction vehicles and equipment being dragged across local roads and highways.

Known as "fraffic," this would not only pose risk of a hazardous waste spill that would damage nearby water and soil, but could also cause permanent disrepair to roads at taxpayers'expense, CAPP members said.

"If Perinton can regulate the activity on its roads, we can certainly make an impact because it affects us directly," said Sullivan. Town Supervisor Jim Smith responded to the presentation, which was also heard by members of the Perinton Conservation Board.

"We certainly agree that these are not things we want to see happen in Perinton, and we want our community to be protected from certain impacts," he said.

Smith said the town will evaluate its existing zoning code to ensure it is "structurally sound" before making any additional changes to it or presenting a hydrofracking ban or moratorium.

"We think our zoning code is the best line of defense," said Smith.

Environmental group looks far beyond the state impact fee law

News-Item, The (Shamokin, PA) - Thursday, April 5, 2012
HARRISBURG - As county officials face a looming April 16 deadline to levy a Marcellus Shale drilling fee on 2012 production, an environmental group is urging state officials to address a host of drilling issues that are not covered by the new state impact fee law.

The Pennsylvania Environmental Council said action is needed to adopt regulations to put the impact fee law Act 13 fully in effect and adopt a number of recommendations from the governor's Marcellus Shale Advisory Commission that aren't in the legislation.

Among its priorities, PEC cites adopting regulations to restrict sitings of gas wells in floodplains and enacting a law to set construction standards for private water wells.

The impact fee law enacted in February after a lengthy political battle includes both the county option impact fee and the first major rewrite of environmental laws regulating gas drilling in a quarter-century. Even as the bill headed to passage, lawmakers in floor debate said they fully expect to be debating drilling issues for years to come.

Environmental provisions in the new law dealing with such matters as well setbacks and bonding amounts were also addressed in the Shale commission report. The commission offered nearly 100 recommendations in areas covering economic development, impact on local communities, environmental protection, public health and safety and infrastructure.

But PEC, which had a seat on the commission, is putting the focus on the steps it considers left undone. Not all the commission's recommendations require legislation or regulations to be implemented. Some involve policy changes or coordinated action by state agencies.

PEC's action list includes:

- Adopting regulations to spell out Act 13 provisions for driller water management plans, wastewater tracking and reporting, reporting of air emissions and disclosing chemicals used in hydraulic fracturing .

Implementing the following commission recommendations:

- Find ways to use non-freshwater sources such as acid mine water and recycled water for fracking .

- Protect areas of high ecological value such as forests and sensitive aquatic communities from drilling.

- Strengthen the permit review process to protect rare and endangered species.

- Analyze the design and structure of spill containment systems to determine if improvements can be made.

- Additional well setbacks for high quality or exceptional value streams.

- Issue a report on the placement of natural gas gathering lines.

- Create a state Department of Health registry tracking health of individuals who live within a one-mile radius of gas drilling and production sites.

- Establish a specialized team of emergency responders to deal with well blow outs and fires.

- Provide comprehensive training to local fire and emergency responders.

The Pennsylvania Emergency Management Agency and State Fire Commissioners' Office are developing plans to use their share of impact fee revenue to address the last item.

The Corbett administration is working on a number of fronts to implement the remaining recommendations, said Chad Saylor, spokesman for Lt. Gov. Jim Cawley, the Shale commission chairman. Patrick Henderson, the governor's top energy advisor, is coordinating the effort which often involves getting agencies to work together.

"Act 13 is only a step on the path to comprehensive energy development and regulation," said Saylor. "This is going to be a continuing process."

State officials are in discussions with federal counterparts over the use of acid mine water, he added.

Enacting a law to provide drillers with immunity from environmental liability for using acid mine water is among the commission's recommendations.

Apart from the administration's agenda, individual lawmakers are still pushing for action on drilling bills. Rep. Greg Vitali, D-Havertown, has sponsored a bill to require air pollution permits for Marcellus wellhead area emissions, increase air permit fees and require the state Department of Environmental Protection to publish information about air pollution emissions from drilling operations.

(Robert Swift is the Harrisburg Bureau Chief for Times-Shamrock Communications.)

Lee County seeks assurances on ‘ fracking ’

Rocky Mount Telegram (NC) - Thursday, April 5, 2012

Hydraulic fracturing – a mining technique that lets excavators tap hard-to-reach reservoirs of natural gas – has generated cautious support so far from Duke University, the N.C. Department of Environment and Natural Resources and state leaders.

The processs, nicknamed “ fracking ,” holds great potential for natural gas supplies and the creation of jobs that come with that industry. But environmentalists warn that the process can pose risks to water supplies and nearby residents.

The cautious approval from experts at Duke and DENR offer some peace of mind, but few can blame commissioners in Lee County for taking a responsible approach to the concept. Lee is one of the counties that could be the site of fracking .

Commissioners there are excited about the possibility of new jobs and a boost to their economy. But in a resolution they passed this week, they also called for new regulations and a new oversight authority if the N.C. General Assembly moves to allow the practice.

Most reasonable-minded folks would share their view.

If legislators follow Lee County's lead, though, we would urge caution about the makeup of such an authority. In some cases, such boards become loaded with representatives of the industry.

Those folks might be experts on mining, but would they be champions for the interests of the public at-large, as well?

The potential of hydraulic fracturing will continue to generate discussion among state leaders and counties this spring. With important, clear-eyed regulation, fracking can boost North Carolina's economy and pose little risk to its quality of life.

API: EPA in the way of oil, gas drilling
UPI International Intelligence - Friday, March 16, 2012
Author: UPI News Service

The U.S. Environmental Protection Agency needs to adjust emissions rules so they don't interfere with domestic oil and natural gas production, the API said.

The American Petroleum Institute funded a study that concluded proposed EPA rules on emissions would lower domestic hydraulic fracturing for natural gas more than 50 percent, cut natural gas production overall 11 percent and reduce oil production as much as 37 percent.

EPA needs to fix these rules in a way that they'll reduce emissions but not impede oil and natural gas development, which creates jobs and government revenue and improves our energy security, Howard Feldman, API director of scientific and regulatory affairs, said in a statement.

The EPA's proposed rules are designed to reduce emissions of volatile organic compounds from drilling and production of oil and natural gas.

API claims the proposal would mean the federal government is out an estimated $10.8 billion in taxes and royalties from drilling and production.

Last week, the energy trade group announced it was suing the EPA for what it claimed were unachievable requirements for use of cellulosic biofuels in 2012 fuel standards.

THE FUTURE OF OIL. (cover story) By: Walsh, Bryan. Time, 4/9/2012, Vol. 179 Issue 14, p28-35
The article discusses the oil industry as of April 2012 and examines the environmental impact of several extreme oil drilling practices, including deep water drilling in the Arctic Ocean, oil sands in Canada, and fracking in the U.S. It states that the demand for oil continues to increase and is expected to reach 800,000 barrels per day in 2012. The rich shale oil deposits being explored in the Bakken formation in South Dakota are mentioned. The emergence of Brazil as an oil-producing partner for the U.S. is examined in light of the instability in the Middle East oil markets. Several charts and diagrams are presented, including a graph which shows oil barrel prices from 1870 through 2011.

Shale oil brings some hope for eastern oil refineries
Penn Energy 04/05/2012
http://www.pennenergy.com/index/petroleum/display/2177609668/articles/pennenergy/petroleum/refining/2012/april/shale-oil_brings_some.html?cmpid=EnlDailyPetroApril92012
The oil refining sector has suffered around most of the world in recent years, as they struggle to deal with high crude oil prices and slackening demand.

Technical innovations in shale gas development
Penn Energy
http://www.pennenergy.com/index/articles/display/3962895416/articles/pennenergy/careers/hot-jobs__technical.html?cmpid=EnlDailyPetroApril92012
Experts are calling the discovery of shale gas in the last decade and the new drilling techniques that came along with it, a "natural gas revolution."

Eagle Ford Shale Slideshow

San Antonio Business Journal by Donna J. Tuttle, Projects Editor
Date: Friday, April 6, 2012, 1:10pm CDT - Last Modified: Friday, April 6, 2012, 1:22pm CDT
Related:Technology, Commercial Real Estate, Energy View photo gallery (20 photos)
ERIK REYNA / SAN ANTONIO BUSINESS JOURNAL
The water tower in Encinal, Texas, is a landmark in this tiny town, which falls within the Eagle Ford Shale play.

Donna J. Tuttle Projects Editor - San Antonio Business Journal
[The Library subscribes to this journal - stop by to view the slide show]
As oil and gas drillers targeting the Eagle Ford Shale hit pay dirt, once sleepy towns south of San Antonio are getting a new lease on life.

What's more, San Antonio and South Texas stand to rack up billions of dollars in economic impact, thousands of new jobs, office leases and a spike in retail sales — all due to the petroleum-rich shale play.

Photographer Erik Reyna spent the day in Encinal, Texas. His photos reveal the places, faces and equipment that make up the shale-play industry. Check out today's Business Journal (Friday, April 6th) for the entire Special Report.

Natural gas glut means drilling must slow

POSTED: 09:07 AM Monday, April 9, 2012
BY: The Associated Press
TAGS: drilling, natural gas, prices, production, shale, supply
NEW YORK — The U.S. natural gas market is bursting at the seams.

So much natural gas is being produced that soon there may be nowhere left to put the country's swelling surplus. After years of explosive growth, natural gas producers are retrenching.

The underground salt caverns, depleted oil fields and aquifers that store natural gas are rapidly filling up after a balmy winter depressed demand for home heating.

The glut has benefited businesses and homeowners that use natural gas. But with natural gas prices at a 10-year low — and falling — companies that produce the fuel are becoming victims of their drilling successes. Their stock prices are falling in anticipation of declining profits and scaled-back growth plans.

Some of the nation's biggest natural gas producers, including Chesapeake Energy, ConocoPhillips and Encana Corp., have announced plans to slow down.

"They've gotten way ahead of themselves, and winter got way ahead of them too," says Jen Snyder, head of North American gas for the research firm Wood Mackenzie. "There hasn't been enough demand to use up all the supply being pushed into the market."

So far, efforts to limit production have barely made a dent. Unless the pace of production declines sharply or demand picks up significantly this summer, analysts say the nation's storage facilities could reach their limits by fall.

That would cause the price of natural gas, which has been halved over the past year, to nosedive. Citigroup commodities analyst Anthony Yuen says the price of natural gas — now $2.08 per 1,000 cubic feet — could briefly fall below $1.

"There would be no floor," he says.

Since October, the number of drilling rigs exploring for natural gas has fallen by 30 percent to 658, according to the energy services company Baker Hughes. Some of the sharpest drop-offs have been in the Haynesville Shale in Northwestern Louisiana and East Texas and the Fayetteville Shale in Central

Arkansas. But natural gas production is still growing, the result of a five-year drilling boom that has peppered the country with wells.

The workers and rigs aren't just being sent home. They are instead being put to work drilling for oil, whose price has averaged more than $100 a barrel for months. The oil rig count in the U.S is at a 25-year high. This activity is adding to the natural gas glut because natural gas is almost always a byproduct of oil

drilling.

Analysts say that before long companies could have to start slowing the gas flow from existing wells or even take the rare and expensive step of capping off some wells completely.

"Something is going to have to give," says Maria Sanchez, manager of energy analysis at Bentek Energy, a research firm.

U.S. natural gas production has boomed in recent years as a result of new drilling techniques that allow companies to unlock fuel trapped in shale formations. Last year, the U.S. produced an average of 63 billion cubic feet of natural gas per day, a 24 percent increase from 2006. But over that period consumption has grown half as fast.

The nation's storage facilities could easily handle this extra supply until recently because cold winters pushed up demand for heating and hot summers led to higher demand for air conditioning. Just over half the nation's homes are heated with natural gas, and one-quarter of its electricity is produced by gas-fired power plants.

But this past winter was the fourth warmest in the last 117 years, according to the National Oceanic and Atmospheric Administration. It was the warmest March since 1950.

Between November and March, daily natural gas demand fell 5 percent, on average, from a year earlier, according to Bentek Energy. Yet production grew 8 percent over the same period.

"We haven't ever seen a situation like this before," says Chris McGill, Vice President for Policy Analysis at the American Gas Association, an industry group.

At the end of winter, there is usually about 1.5 trillion cubic feet of gas in storage. Today there is 2.5 trillion cubic feet because utilities withdrew far less than usual this past winter.

There is 4.4 trillion cubic feet of natural gas storage capacity in the U.S. If full, that would be enough fuel to supply the country for about 2 months.

If current production and consumption trends were to continue, Bentek estimates that storage facilities would be full on October 10.

Storage capacity, which has grown by 15 percent over the past decade, cannot be built fast enough to address the rapidly expanding glut. And analysts note there is little financial incentive to build more anyway.

The low price brought on by the glut has increased demand for natural gas among industrial users and utilities.

Makers of chemicals, plastics and fertilizers that use natural gas as a feedstock are expanding. Garbage trucks, buses and delivery vehicles are using more natural gas. Electric power producers are switching from coal to natural gas whenever possible.

This won't add up to enough new demand quickly enough to relieve the pressure on storage facilities this summer.

Scorching temperatures this summer would do the trick, but Mother Nature is not expected to cooperate.

Temperatures this summer are forecast to be about normal, and much cooler than the last two summers, says David Streit, a meteorologist at Commodity Weather Group expects.

Sultry winters, he said, do not usually develop into sultry summers.

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"Strive not to be a success but rather of value." Albert Einstein